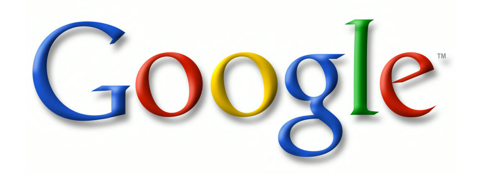
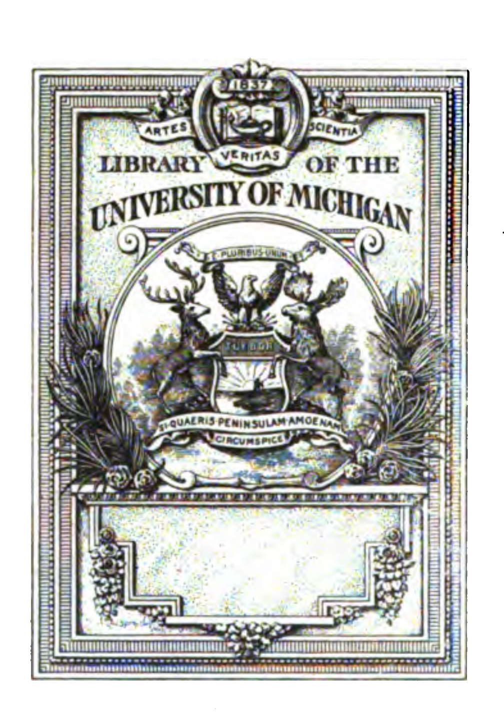
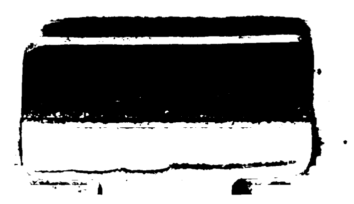


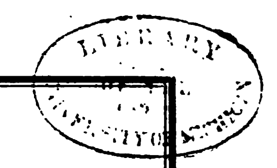



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# LOGARITHMISCH-TRIGONOMETRISCHE

# TAFELN

5 Place.

## MIT FÜNF DECIMALSTELLEN

BEARBEITET

VON

DR. C. BREMIKER.

2

ZWEITE VERBESSERTE STEREOTYP-AUFLAGE.

BERLIN,
WEIDMANNSCHE BUCHHANDLUNG.
1876.

# VORWORT.

Die nachstehende Tafel verdankt ihre Entstehung dem mehrfach ausgedrückten Wunsche, die Principien, welche bei der sechsstelligen und späteren siebenstelligen Tafel massgebend gewesen sind, auch auf eine fünfstellige Tafel in Anwendung gebracht zu sehen. Einer schon vor Jahren gegebenen Zusage konnte im Drange anderer Arbeiten erst jetzt entsprochen werden, und es ist mir eine besondere Genugthuung, das Buch jetzt fertig vor mir zu sehen, da sowohl der eigene Gebrauch die Bedürfnissfrage stets zusagend beantwortete, als auch damit Gelegenheit zur Publikation von einigen andern längst entworfenen Tafeln gegeben war, welche nun im Anhange beigegeben sind. Bezüglich der inneren Einrichtung von Tafeln giebt es etwas Allgemeines, welches in dem bequemen und leichten Gebrauche wurzelt, und nie vernachlässigt werden sollte. Wenn Jemand beim Anblick einer Leiter von fünfzig Sprossen die fünfundzwanzigste angeben soll, so wird er unwillkührlich nach der Mitte blicken. Ist diese Sprosse dann noch mit einer besonderen Farbe gestrichen, so ist sie zugleich aufgefunden. Das Bild könnte noch weiter ausgeführt werden. Auch wird Jeder die Bemerkung gemacht haben, dass die an sich ungekünstelte Aegyptienne, wie man sie jetzt häufig auf Schildern sieht, bei weitem besser und in grösserer Entfernung zu lesen ist, als die Schrift mit den schönen römischen Initialen. Diese und ähnliche Betrachtungen, so wie der fünfzigjährige Gebrauch der besten vorhandenen grösseren und kleineren Tafeln setzten den Verfasser in den Stand,

Licht und Schatten zu trennen, und gewisse Principien für die Construction von Tafeln als massgebend zu erkennen. Es ist derselben bereits in der Einleitung zu der sechsstelligen und siebenstelligen Tafel gedacht worden.

In Bezug auf fünfstellige Tafeln ist zunächst zu bemerken, dass die so viel verbreiteten und in alle lebende Sprachen übertragenen so beliebten Lalande'schen Tafeln für den Gebrauch höchst unbequem sind. Der trigonometrische Theil ist insofern richtig angelegt, als jeder Grad zwei volle Seiten einnimmt und damit abschliesst, wogegen die Logarithmen der Zahlen, die sich dem Format von 30 Zeilen haben fügen müssen, ein unsicheres Umherirren bedingen, welches auf die Dauer ermüdend ist. Die Beliebtheit scheint vorzugsweise durch das kleine Format hervorgerufen zu sein, obgleich ich nicht finde, dass auf dem Tische des Rechners das Duodez-Format vor einem mässigen Octav besondere Vorzüge hätte, das portatif also eigentlich keine Bedeutung hat, da man auf Spaziergängen nicht mit fünfstelligen Logarithmen rechnet. Dieses Letztere dürfte eher gelingen mit der hier bei Nicolai erschienenen Tafel in Visitenkarten-Format.

Das kleine Format der Lalande'schen Tafeln finden wir denn auch in neueren Tafeln verlassen, wie in der von Wittstein, Hoüet, Gauss und anderen; dagegen haben sich neue Mängel eingefunden, welche ihre sonstigen Vorzüge sehr beeinträchtigen. Um dieses kurz anzudeuten, schliessen bei Wittstein*) sowohl die Logarithmen der Zahlen nicht mit vollen Tausenden auf jeder Seite ab, so dass hier der Turnus erst auf der 11. Seite wiederkehrt, als auch die Logarithmen der trigonometrischen Functionen keineswegs mit dem vollen Grade, so dass erst die je dritte Seite mit derselben Minute anfängt. Dieser Uebelstand ist dadurch hervorgerufen, dass 40 als die Zahl der Zeilen auf jeder Seite angenommen ist, welche Zahl weder in 100, noch in

*) Fünfstellige logarithmisch-trigonometrische Tafeln. Hannover 1865. Hahn'sche Hofbuchhandlung.

60 aufgeht. Ferner sind bei den Logarithmen der Zahlen die drei letzten Ziffern abgesondert, wodurch der Uebergang der beiden ersten Ziffern zu häufig eintritt. Dieselbe Anordnung des Absonderns von drei Ziffern, statt vier, wie man es bei sechs- und siebenstelligen Tafeln gewohnt ist, findet sich auch in der Tafel von Gauss*), wo sonst schon eine mehr systematische Anordnung der Seiten angetroffen wird. Die Trennung der drei letzten Ziffern von den beiden ersten ist einem zu weit gehenden Streben nach Deutlichkeit zuzuschreiben. Die Tafel von Hoüel**), vor einiger Zeit auch mit deutscher Einleitung, vernachlässigt Alles, was zur Bequemlichkeit des Auffindens beitragen könnte. Die Logarithmen der Zahlen sind in Columnen von 60 zu 60 geordnet, weil dieses die Zahl der Secunden und Minuten ist, die auf die höhere Einheit gehen. Die Proportionaltäfelchen geben, wie alle aus dem vorigen Jahrhundert stammenden Tafeln, nur volle Einheiten. Im trigonometrischen Theile sind die längst für entbehrlich gehaltenen Logarithmen der Sekanten und Cosekanten wieder hinzugefügt, so dass man glaubt, einen Abdruck von Sherwin vor sich zu haben, in übrigens schöner, von Firmin Didot zuerst bei der Callet'schen Tafel eingeführten Schrift.

Es mag genügen, bei einigen neueren Tafeln, uneingedenk der älteren, die Schattenseiten hervorgehoben zu haben. Um auf das Positive überzugehen, dürfte zunächst die Frage nach dem Inhalt einer fünfstelligen Tafel von Wichtigkeit sein. Nächst dem Bedürfniss des Geometers, den Logarithmen der Zahlen und der trigonometrischen Functionen Sinus, Cosinus, Tangente und Cotangente, zu welchen auch noch die Additions- und Subtractions-Logarithmen zu rechnen, begegnet man einer Verschiedenheit von Tafeln, entweder im Interesse des Nautikers, Astronomen, Baumeisters, Ingenieurs, Chemikers, jenachdem der Verfasser diesem oder jenem Fache eine besondere Vorliebe zuwendete. Bei dem geringen Um-

*) Fünfstellige vollständige logarithmische und trigonometrische Tafeln. Berlin 1870 bei Rauh.

**) Fünfstellige Logarithmen. Berlin 1864 bei Ascher.

fang, welchen der logarithmische Theil in Anspruch nimmt, werden Manchem solche Zugaben willkommen und für die Wahl der Tafel bestimmend sein. Dagegen ist es völlig werthlos, der Tafel der Logarithmen noch eine der Antilogarithmen hinzuzufügen, da Jeder die Erfahrung macht, dass das Aufsuchen der Zahl, wenn der Logarithme gegeben ist, sich mit derselben Leichtigkeit vollzieht, wie das Aufsuchen des Logarithmen. Ebenso muss die nutzlose Zugabe der Sinusversus und Cosinusversus getadelt werden, als dekadische Ergänzung der log cos und log sin, da das Subtrahiren eines Logarithmen nicht mehr Mühe macht als das Addiren. Mit demselben Rechte könnte man auch eine Tafel der dekadischen Ergänzungen der Logarithmen der Zahlen verlangen, was glücklicherweise noch Keinem in den Sinn gekommen ist. Eine nutzlose Vermehrung von Tafeln, oder auch nur von Spalten in einer Tafel aber schädigen den Gebrauch derselben. Ferner halten wir eine Tafel der natürlichen Logarithmen für entbehrlich, da Niemand damit rechnet. Will man den natürlichen Logarithmen haben, wie es in einzelnen Fällen vorkommen kann, so wird Jeder ihn aus dem Brigg'schen berechnen, welches viel weniger Mühe macht, als das Aufsuchen in einer Tafel, die zum Interpoliren in der Regel nicht eingerichtet ist. Ausserdem werden auch Tafeln der Vielfachen des Moduls und dessen reciproken Werthes gegeben, welche die Verwandlung der Logarithmen erleichtern. Am einfachsten ist die Anwendung des Logarithmen des Moduls.

Der erste Theil der Tafel, die Logarithmen der Zahlen enthaltend, ist hier in der Form der sechs- und siebenstelligen Tafeln gegeben. Die Horizontalreihen entsprechen den vollen Zehnern, die Verticalreihen, in welche die vier letzten Stellen des Logarithmen gesetzt sind, den Einern der gegebenen Zahl, mit dem Unterschiede, dass hier nur eine Stelle des Logarithmen abgetrennt in die Spalte 0 gesetzt ist, wie dort die ersten zwei und drei Stellen. Abgesehen davon, dass man durch die sechs- und siebenstellige Tafel an diese Form sich gewöhnt hat, bietet sie den Vortheil,

dass genau 1000 Logarithmen auf jeder Doppelseite des aufgeschlagenen Buches stehen, und der Wechsel der ersten Ziffer zehnmal seltener eintritt, als beim Abtrennen der ersten zwei Ziffern. Es giebt Anhänger der anderen Form, in welcher für jede Zahl der ganze Logarithme mit seiner Differenz angegeben wird. Sie findet sich vorzugsweise in nautischen Tabellen, auch bei Hoüel, hat aber den Nachtheil, dass bei 250 Zahlen, der besten Abtheilung, erst auf der fünften Seite derselbe Eingang wiederkehrt, oder wie bei Hoüel, bei 300 Zahlen, erst auf der elften, ein Nachtheil, der bei häufigem Gebrauche sehr lästig wird.

Der zweite Theil enthält die Logarithmen der Sinus, Tangenten, Cotangenten und Cosinus für jedes Hundertel der Grade des Quadranten. Wir sind hiermit der neuen Richtung gefolgt, welche mit Recht darin eine Erleichterung erstrebt, in jeder Art von Mass nur eine Einheit zu haben. Die Unbequemlichkeit der bisher üblichen drei Einheiten im Bogenmass ist längst anerkannt, und wir finden in den meisten fünfstelligen Tafeln nur noch den Grad und die Minute. Ist dann für das Intervall der Minute die Differenz angesetzt, so kann man die Unterabtheilungen in Decimaltheilen der Minute ausdrücken. Wird aber statt der Differenz der sechzigste Theil derselben angegeben, wie bei Wittstein, so ist man genöthigt, auf die dritte Einheit, auf Secunden überzugehen. In allen Fällen, wo die Länge des Bogens für den Radius 1 verlangt wird, und diese kommen häufig vor, ist man genöthigt, die drei Einheiten auf eine zurückzuführen, welches bei unserer Einrichtung wegfällt. Wir wollen indess keineswegs uns anmassen, zuerst diese Bequemlichkeit eingeführt zu haben. Schon der Erfinder des nach ihm benannten Logarithmensystems, Heinrich Brigg, giebt in seiner Tafel „Trigonometria brittannica, Goudae 1633“ die trigonometrischen Functionen für jeden Hundertelgrad des Quadranten. Dieser Fortschritt wurde aber noch in demselben Jahre durch Adrian Vlac wieder rückgängig gemacht durch die von ihm herausgegebene und von 10 zu 10 Secunden (ad decades secundorum scrupulorum) fort-

schreitende Tafel*), um den trigonometrischen Calcul, wie er sich ausdrückt, sicherer und bequemer zu machen (ut calculus trigonometricus certior et facilior redderetur). Diesem sind die späteren Herausgeber von Tafeln gefolgt.

Die durch die französische Revolution zu Ende des vorigen Jahrhunderts eingeführte Eintheilung des Quadranten in 100 Theile, für welche die Delambre'schen**) Tafeln und die von Hobert und Ideler***) berechnet sind, findet man noch in verschiedenen Gegenden bei Feldmessern im Gebrauch, in der Astronomie ist sie wieder aufgegeben. Eine systematische Theilung des Kreises kann nur durch eine radicale Beseitigung der alten Eintheilung herbeigeführt werden, indem man den ganzen Kreis als Einheit decimal theilt, dann aber auch den Tag, welcher ebensowohl ein Kreis ist, in decimale Theile. Den tausendsten Theil des Kreises könnte man Grad nennen, den zehnten Theil des Tages Stunde. Doch dieses in Vorschlag zu bringen, oder gar die ersten Schritte dazu zu thun, gebricht es uns an Muth.

Die Eintheilung des Grades in 100 Theile hat für die Tafel noch die Vortheile, dass bei 50 Zeilen, wie bei den Logarithmen der Zahlen, die zwei Seiten des aufgeschlagenen Buches den Grad vollständig geben, und das Intervall kleiner ist, wie für die Minute. Die Differenztäfelchen, welche von $4^0$ an für jede Differenz haben Platz finden können, geben nach dem Vorgange der sechsstelligen Tafel†) das Zehntel der Differenz genau, um damit nöthigenfalls noch zwei weitere Decimalstellen herzustellen. In der Regel wird man sich mit der dritten Stelle begnügen können. Der Uebergang von Bogen auf Sinus und Tangente für die ersten vier Grade wird durch eine besondere Tabelle vermittelt. Andere Hülfsmittel, wie bei Hoüel die natürlichen Sinus und Tangenten, genügen nicht, weil man bei kleinen Bogen

*) Trigonometria artificialis, Goudae 1633.

**) Tables trigonométriques décimales, Paris An IX.

***) Neue trigonometrische Tafeln, Berlin 1799.

†) Logarithmorum VI decimalium nova tabula Berolinensis. Berlin 1852.

nur zwei oder drei bedeutsame Ziffern bekommt, die den fünfstelligen Logarithmus nicht wiedergeben.

Die Tafel der Additions- und Subtractions-Logarithmen ist conform mit der in der sechsstelligen Tafel*), und da dort die Gründe angegeben sind, welche mich bestimmt haben, von Andern abzuweichen, so kann ich darauf verweisen. Die um eine Stelle verminderte Stellenzahl erlaubt bei demselben Maximum der Differenzen ein zehnmal grösseres Intervall, wodurch die Tafel sich auf neun Seiten zusammenzieht. Wollte man nach diesem Princip eine siebenstellige Tafel entwerfen, so würde dieselbe bei grösserer Bequemlichkeit im Gebrauch, da Argument und Function gleichzeitig wachsen und die Differenzen nicht über 620 hinausgehen würden, gegen 814 bei Zech, nur 70 Seiten einnehmen, gegen 200 der Zech'schen Tafel.

Hiermit würde der generelle Inhalt, den eine fünfstellige Tafel haben muss, erschöpft sein. Im Interesse der in neuerer Zeit so vielfach in Anwendung gekommenen Methode der kleinsten Quadratsummen, vorzugsweise in der Physik und Geodäsie, ist indess noch eine Tafel der Quadrate hinzugefügt, speciell für die Bildung der Fehlerquadrate eingerichtet, weil die vorhandenen Tafeln, die nur volle Quadrate geben, hierzu weniger geeignet sind.

In dem Anhange habe ich versucht, einem allgemein gefühlten Bedürfniss, nämlich nach einem Mittel zur Bestimmung der Zeit, durch geeignete Tafeln entgegenzukommen. Die Uhren, sowohl Pendel- als Taschenuhren, sind in den letzten 20 Jahren zu einer grossen Vollkommenheit gelangt, so dass die tägliche Abweichung innerhalb weniger Secunden bleibt, aber leider fehlt es an den meisten Orten, wo nicht grade ein Observatorium zur Zeitbestimmung vorhanden ist, oder der Telegraph die Zeit angiebt, an einer richtigen Vergleichung. Das den Tafeln zu Grunde liegende Verfahren ist die Bestimmung des Stunden-Winkels der

*) Logarithmisch-trigonometrische Tafel mit 6 Decimalstellen. Berlin 1869. Nicolai.

Sonne, wenn die geographische Breite, die nach einer guten Karte mit hinlänglicher Genauigkeit genommen werden kann, und die Höhe der Sonne gegeben sind. Die letztere bestimmt sich am genauesten mit einem kleinen Theodoliten, Spiegelsextanten oder Universalinstrumente, wie solche bei Baumeistern, Ingenieuren und Feldmessern im Gebrauch sind, und die daraus gefolgerte Zeit hat unter günstigen Umständen nur eine Unsicherheit von wenigen Secunden. In Ermangelung eines solchen Instruments kann man sich eines Sextanten mit Dioptern bedienen, wie sie hier von Herrn Mechanikus Bonsack für den Preis von vier Thalern sehr sauber angefertigt werden. Da diese letzteren die Höhe der Sonne schon bis auf Bruchtheile des Grades sicher angeben, so kann die daraus berechnete Zeit nicht über eine Minute von der Wahrheit abweichen, ein für gewöhnliche Uhren schon sehr werthvolles Resultat. Das Bedürfniss nach einer guten Zeitbestimmung tritt am lebhaftesten auf in Gegenden, die von grösseren Orten oder Eisenbahn-Stationen entfernt liegen, bei Uhrmachern, Gutsbesitzern, Pächtern und Verwaltungs-Inspectoren. Wenn diese Herren mitunter 100 bis 500 Thaler an eine Ankeruhr wenden, so kann eine weitere Ausgabe von 30 bis 40 Thlrn. für ein Instrument, womit sich die Sonnenhöhe bis auf eine Minute sicher messen lässt, nicht in Betracht kommen. Denn was nützt eine gute Uhr, wenn man kein Mittel in Händen hat, sich ihres Standes und Ganges zu versichern?

Im weiteren Anhang sind einige Seiten der Chronologie gewidmet, einer zwar in die bürgerlichen Verhältnisse tief eingreifenden Wissenschaft, worüber aber selbst bei Gebildeten klare Begriffe selten angetroffen werden. So lange der laufende Kalender ausreicht, kann dieser Auskunft geben, darüber hinaus fehlt es an jedem sicheren Anhalt. Es sind daher auf einigen Seiten die Grundzüge der Julianischen und Gregorianischen Zeitrechnung nebst einigen Tabellen gegeben, mit deren Hülfe der Kalender eines beliebigen Jahres bis zum Jahre 2200 n. Chr. leicht hergestellt werden kann. Für Fachgenossen bemerke ich, dass an die Stelle

der Sonntags-Buchstaben hier Zahlen gesetzt sind, welche das Datum der Sonntage geben, die Epakten-Rechnung aber durch Einführung von Täfelchen umgangen ist, welche mit Hülfe der güldenen Zahl den Frühlings-Vollmond leicht finden lassen. Erst nach Ablauf dieser Täfelchen, die bis zum Jahr 2200 n. Chr. reichen, wird es nöthig, auf die Epakten-Tafel des Lilius zurückzugehen.

Berlin, im März 1872.

BREMIKER.

# INHALT.

# EINLEITUNG.

Die Brigg'schen Logarithmen, deren man sich zur Ausführung grösserer Rechnungen bedient, sind Exponenten der Zahl 10, deren Potenzen die zugehörigen Zahlen bilden. Sind die Exponenten a und b, und ist

$$10^a = A \text{ und } 10^b = B,$$

so sagt man, a ist der Logarithme von A und b ist der Logarithme von B. Die Lehre von den Potenzen leitet aus diesen Gleichungen folgende ab:

$$10^{a+b} = AB,\ 10^{a-b} = \frac{A}{B},\ 10^{ac} = A^c,\ 10^{\frac{a}{c}} = \sqrt[c]{A}$$

oder, logarithmisch geschrieben:

$$\log AB = a + b,\ \lg\frac{A}{B} = a - b,\ \log A^c = ac,\ \lg\sqrt[c]{A} = \frac{a}{c},$$

wonach die Logarithmen eines Products oder Bruches durch Addition oder Subtraction, die Logarithmen einer Potenz oder Wurzel durch Multiplication oder Division der Logarithmen der Grundzahl gefunden werden. Die Anwendung dieser Formen, welche das Rechnen mit Logarithmen ausmacht, wird daher dadurch bedingt, dass man mit Leichtigkeit zu jeder gegebenen Zahl den zugehörigen Logarithmen finden kann, und ebenso zu jedem Logarithmen die zugehörige Zahl, und dieses zu vermitteln, ist der Zweck der Logarithmentafel.

Aus dieser Erklärung der Logarithmen, welche für den praktischen Rechner genügend und überall massgebend ist, folgt nun ferner, dass

| | | | |
|---|---|---|---|
| log 1 | = 0 | lg 0.1 | = −1 |
| lg 10 | = 1 | lg 0.01 | = −2 |
| lg 100 | = 2 | lg 0.001 | = −3 |
| lg 1000 | = 3 | lg 0.0001 | = −4 |
| etc. | | etc. | |

und dieses sind die einzigen Zahlen, deren Logarithmus eine ganze Zahl ist. Von allen übrigen Zahlen besteht der Logarithme aus einer ganzen Zahl, der Kennziffer oder Charakteristik, und einem Decimalbruch, der Mantisse, und diese letztere ist es, welche durch die Tafel gefunden wird, zu welcher dann die zugehörige Kennziffer, die aus obigem Schema leicht zu entnehmen ist, noch hinzugefügt wird.

*Die Logarithmen der Zahlen.*

Auf Pag. 2 bis 5 sind für jede Zahl unter 1000 die Logarithmen angegeben. Sie werden nur benutzt, wenn man von verschiedenen Zahlen, die höchstens dreizifferig sind, die Logarithmen gebraucht, weil man sie dann hier auf vier Seiten zusammengedrängt antrifft. Sonst wäre dieser Theil überflüssig, da diese sämmtlichen Logarithmen auch auf den folgenden Seiten zu finden sind. Diesen Logarithmen ist, wie überall, noch die Kennziffer vorzusetzen, nämlich 0 für die Zahlen zwischen 0 und 10, 1 zwischen 10 und 100 und 2 zwischen 100 und 1000. So findet sich der Logarithme von 574 = 2,75891.

Von Seite 6 bis 23 sind nun die Logarithmen aller mehr als dreizifferigen Zahlen aufzusuchen. Für jede vierzifferige Zahl ist der Logarithme unmittelbar angegeben. Die drei ersten Ziffern werden in der mit 18 überschriebenen Spalte aufgesucht, die vierte Ziffer unter den Kopfzahlen. Da, wo die zu den drei ersten Ziffern gehörige Zeile mit der Spalte der vierten Ziffer zusammentrifft, stehen die vier letzten Ziffern, welche mit der ersten in die Spalte 0 gesetzten Ziffer zusammengelesen den Logarithmus geben. So findet sich auf Seite 7 der log 1856 = 26858, oder wenn noch die Kennziffer der vierstelligen Zahl hinzugefügt wird, = 3,26858.

Hat die vorgelegte Zahl mehr als vier Ziffern, so werden die auf diese folgenden Ziffern als Decimalbruch angesehen. Mit diesem Decimalbruch wird dann die Differenz der Logarithmen multiplicirt, und das Product zu dem Logarithmen der vierzifferigen Zahl addirt. Wäre 185675 die vorgelegte Zahl, so würde man mit 1856,75 in die Tafel eingehen und die Differenz der Logarithmen, die zu den Zahlen 1856 und 1857 gehören, 23 mit 0,75 multipliciren. Dieses Product ist 17,25, wovon nur die Ganzen benutzt und zu 26858, dem Logarithmen von 1856, addirt werden. Man erhält lg 1856,75 = 3,26875 oder lg 185675 = 5,26875. Um die Multiplication zu erleichtern, sind für die Differenz 23 in dem zur Seite angebrachten Täfelchen die Zehntel dieser Zahl, also auch die Hundertel angegeben, welche leicht im Kopfe zusammenaddirt werden können, nämlich für das obige Beispiel 16,1 für 0,7 und 1,15 für 0,05, zusammen 17 mit Weglassung der Bruchtheile.

Wenn ein Wechsel der ersten Ziffer der Logarithmen eintritt, so ist dieses auf der ersten der vier letzten Ziffern durch einen Strich angedeutet, um darauf aufmerksam zu machen. So findet sich Pag. 7 lg 1998 = 30060, abgesehen von der Kennziffer.

Der Logarithmus eines ächten Bruches ist negativ, weil der Logarithmus des Nenners grösser ist als der des Zählers. Es ist aber bequemer, mit positiver Mantisse zu rechnen und die Kennziffer negativ hinzuzufügen. Zu dem Ende denkt man sich den vorgelegten Decimalbruch mit einer so hohen Potenz von 10 multiplicirt, als der Bruch Stellenzahlen hat, wodurch er eine ganze Zahl wird. Der Logarithme dieser ganzen Zahl wird dann um den Logarithmen der Potenz von 10 vermindert. Ist gegeben die Zahl 0,0185675, so wird diese $= 185675 : 10^7$ sein. Der Logarithmus des Zählers ist wie oben = 5,26875, wovon der Logarithme des Nenners = 7 zu subtrahiren ist. Der verlangte Logarithme wird daher = 5,26875 — 7. Hierfür schreibt man lieber 8,26875 — 10. Abgesehen von dieser subtractiven 10, die in der Regel nicht geschrieben wird, erhält man die Kenn-

ziffer eines Decimalbruches, wenn die Anzahl der auf das Komma folgenden Nullen von 9 abgezogen wird.

Soll zu einem gegebenen Logarithmus die zugehörige Zahl gefunden werden, so suche man zuerst die erste Ziffer der Mantisse in der mit 0 überschriebenen Spalte, alsdann in den mit 0, 1, 2, 3 etc. überschriebenen diejenigen vier letzten Ziffern, welche zunächst kleiner sind, als die des vorgelegten Logarithmen. Hierzu entnimmt man aus der Verticalcolumne N die auf derselben Zeile stehenden drei ersten Ziffern und die Kopfzahl der betreffenden Verticalspalte als vierte. Die folgenden Ziffern ergeben sich durch Division der Differenz der in der Tafel aufeinander folgenden Logarithmen in die Differenz, welche der gegebene Logarithme mit dem kleineren der Tafel macht. Ist z. B. der Logarithme 2,35152 gegeben, so findet man auf Seite 8 den zunächst kleineren Logarithmen 35141, welchem die Zahl 2246 entspricht. Dieser Logarithme von dem gegebenen abgezogen giebt 11, welche durch die Differenz der Tafellogarithmen, zwischen welchen der gegebene liegt, und die 19 beträgt, zu dividiren ist. Mit Hülfe des Täfelchens für 19 findet man 0,5 für 9,5 und für 11 — 9,5 = 1,5 noch 0,08, welche zu der gefundenen vierzifferigen Zahl hinzugelegt werden. Man erhält 2246,58, wo jedoch das Komma um eine Stelle weiter zur Linken zu rücken ist, da die gegebene Kennziffer 2 ist. Die zu dem Logarithmen 2,35152 gehörige Zahl ist daher 224,658. In gleicher Weise würde man zu dem gegebenen Logarithmen 7,18520 — 10 die zugehörige Zahl 0,00153179 finden.

*Die Logarithmen der trigonometrischen Functionen.*

Von Seite 26 bis 115 sind für jedes Hundertel der Grade von 0 bis 90 die Logarithmen der Sinus, Tangenten, Cotangenten und Cosinus unmittelbar angegeben. Die aufgeschlagene Doppelseite entspricht hier einem bestimmten Grade. Von 0 bis 44 Grad gilt die Ueberschrift am Kopfe und der linke Rand, letzterer für die Hunderttheile, und von 45 bis 89 Grad die Ueberschrift am Fusse und der

rechte Rand. Sind die gegebenen Winkel nicht in Graden und decimaler Theilung ausgedrückt, so können die Minuten und Secunden leicht nach Pag. 116 in Decimaltheile des Grades verwandelt werden. Wären z. B. 26′ 10″,3 gegeben, so würde man nach Pag. 116 zunächst 0,43 für 25′ 48″ erhalten, dann für den Rest 22″,3 noch 0,0062, zusammen 0,4362 Grad, eine Operation, die leicht im Kopfe ausführbar ist.

Ist die Tangente von 7°,4362 gesucht, so findet man auf Pag. 40 zuerst 9.11531 für 7°,43, wozu noch der Proportionaltheil für 0,0062 hinzukommt. Die Differenz der Logarithmen ist 59 und das entsprechende Differenztäfelchen giebt 35,4 für 0,006 und 1,18 für 0,0002, zusammen 36,58 oder abgerundet 37, welche zu 11531 addirt werden müssen, weil die Tangenten mit dem Bogen wachsen. Man erhält also 9.11568 als den gesuchten log tang. Da aber die Tangenten unter 45 Grad, so wie alle Sinus und Cosinus ächte Brüche sind, so ist hier wie dort noch die negative Kennziffer — 10 hinzuzudenken. Wäre der Cosinus von 58°,057 gesucht, so würde man auf Pag. 89 zu 58,05 zunächst 9.72360 finden, von welchem $0{,}7 \times 12 = 8$ abzuziehen, da die Cosinus bei wachsendem Bogen abnehmen, daher $9.72352 = \cos 58{,}057$. Bei kleinen Winkeln, wo die Sinus und Tangenten nicht mehr gleichmässig mit dem Bogen wachsen, nimmt man den Logarithmen des Bogens, und subtrahirt die auf Seite 159 angegebene Zahl S, wenn der Sinus verlangt wird, oder T, um die Tangente zu erhalten. Wird der Sinus von 0,70153 verlangt, so hat man

| | |
|---|---|
| lg 0.70153 . . . | 9.84605 — 10 |
| S | 1.75813 |
| log Sin . . . . | 8.08792 — 10 |

Ebenso, wenn die Tangente von 3,0722 verlangt wird,

| | |
|---|---|
| lg 3.0722 . . . | 0.48745 |
| T | 1.75771 |
| lg tang . . . . | 8.72974 — 10 |

Wird umgekehrt zu dem gegebenen Logarithmen einer trigonometrischen Function der zugehörige Bogen verlangt, so

geht man von dem nächst kleineren Logarithmen aus, wenn die Function mit dem Bogen wächst, oder von dem nächst grösseren, wenn sie abnimmt, und entnimmt die Ganzen und beiden ersten Decimalstellen der Grade an dem entsprechenden Rande und Kopfe oder Fusse der Tafel. Die folgenden Decimalstellen ergeben sich dann, wenn die Differenz zwischen dem gegebenen und Tafel-Logarithmen durch die ganze Differenz dividirt wird. Es sei der zu log cot = 0,20613 gehörige Bogen gesucht. Auf Pag. 89 findet man 0,20624 als die nächst grössere Zahl, welche zu 31°,88 gehört. Die Differenz zwischen diesem und dem gegebenen Logarithmen ist 11, welche durch 17, die ganze Differenz, dividirt, mit Hülfe des Täfelchens noch 65 ergiebt. Der gesuchte Bogen ist daher 31°,8865. Ist der Sinus oder die Tangente eines kleinen Bogens gegeben, etwa log tang = 8,26601, so entnimmt man zuerst das dieser Tangente entsprechende T nach Pag. 159, welches zu der gegebenen Tangente addirt, den Logarithmus des Bogens giebt. Nämlich

| | |
|---|---|
| log tang = | 8.26601 |
| T Pag 159 ... | 1.75807 |
| log Bogen | 0.02408 |
| Bogen | 1°.05702 |

Ist von einem Bogen über 90° der Sinus, Cosinus, die Tangente oder Cotangente zu nehmen, so subtrahirt man von dem gegebenen Bogen das grösste darin enthaltene Vielfache von 90° und nimmt von dem Ueberschusse Sinus, Cosinus, Tangente oder Cotangente als die gesuchten, wenn das Vielfache eine grade Anzahl von Rechten war, oder man nimmt resp. Cosinus, Sinus, Cotangente, Tangente bei einer ungeraden Anzahl von Rechten. Ausserdem ist zu berücksichtigen, dass der Sinus im 3. und 4. Quadranten negativ ist, der Cosinus im 2. und 3., Tangente und Cotangente im 2. und 4. Diese Verhältnisse sind in nachstehendem Täfelchen, in welchem Z einen Winkel unter 90° bedeutet, so dass 90 + Z im 2., 180 + Z im 3. und 270 + Z im 4. Quadranten liegt, übersichtlich zusammengestellt.

| Bogen | Sinus | Cosinus | Tangente | Cotangente |
|---|---|---|---|---|
| Z | + Sin Z | + Cos Z | + Tang Z | + Cotg Z |
| 90 + Z | + Cos Z | — Sin Z | — Cotg Z | — Tang Z |
| 180 + Z | — Sin Z | — Cas Z | + Tang Z | + Cotg Z |
| 270 + Z | — Cos Z | + Sin Z | — Cotg Z | — Tang Z |

Aus diesem Täfelchen ist zugleich zu ersehen, dass zu jeder gegebenen trigonometrischen Function immer zwei Bogen gefunden werden können. Wäre z. B. ein negativer Cosinus gegeben, so würde man denselben entweder in der Rubrik der Sinus aufsuchen und den zugehörigen spitzen Winkel um 90° vermehren, um den gewünschten Bogen zu erhalten, oder in der Columne der Cosinus und zu dem gefundenen spitzen Winkel 180° addiren. Soll über den Quadranten kein Zweifel übrig bleiben, so muss neben dem gegebenen Logarithmen noch das Zeichen dieser Function und zugleich das Zeichen einer andern Function, welche beide Functionen aber nicht Tangente und Cotangente sein dürfen, bekannt sein. Ist gegeben log tang = 0,17092 und weiss man, dass die Tangente negativ, der Cosinus aber positiv ist, so wird man dem obigen Täfelchen zufolge den gegebenen Logarithmus in der Spalte der Cotangenten Pag. 94 aufsuchen, daselbst den zugehörigen spitzen Winkel 34°,0056 entnehmen und 270° addiren. Der zugehörige Bogen ist daher 304°,0056. Gewöhnlich werden die trigonometrischen Rechnungen so eingerichtet, dass man zur Bestimmung eines Bogens die Logarithmen zweier Zahlen erhält, die dem Sinus und Cosinus dieses Bogens proportional sind, nebst den Zeichen dieser Zahlen, also die Logarithmen von a . Sin A und a . Cos A, wo a eine beliebige unbekannte Zahl und A den zu suchenden Bogen vorstellt. Die Differenz dieser Logarithmen ist dann log tang A und A liegt im 1. oder 3. Quadranten, wenn die gegebenen Logarithmen beide zu positiven oder beide zu negativen Zahlen gehören, welches letztere gewöhnlich durch ein dem Logarithmus angehängtes n angedeutet wird; oder A liegt im 2. oder 4. Quadranten, wenn die Zeichen der Zahlen resp. Plus und Minus, oder Minus und Plus sind. Sobald A gefunden ist, erhält man

auch log a, wenn log Sin A von dem ersten der gegebenen Logarithmen, oder log Cos A von dem zweiten subtrahirt wird. Das nachstehende Täfelchen, welches für jede Combination der Zeichen ein Rechnungs-Beispiel enthält, dient zur näheren Erläuterung.

| | | | | |
|---|---|---|---|---|
| a Sin A | 3.08571 | 9.50281 | 1.88391 n | 8.11585 n |
| a Cos A | 2.71301 | 9.67299 n | 2.00577 n | 7.92103 |
| tang A | 0.37270 | 9.82982 n | 9.87814 | 0.19482 n |
| A | 67.0262 | 145.9488 | 217.0650 | 302.5594 |
| Sin/Cos A | 9.96411 | 9.91831 n | 9.90198 n | 9.92574 |
| a | 3.12160 | 9.75468 | 2.40379 | 8.19011 |

In den ersten beiden Zeilen stehen die gegebenen Logarithmen von a Sin A und a Cos A, welchen ein n angehängt ist, wenn die zugehörige Zahl negativ ist. Die Differenz dieser Logarithmen, = tg A, steht in der dritten Zeile und hierzu wird der Bogen A aufgesucht. Um log a zu erhalten, braucht man noch Sin A oder Cos A, von welchen der leichteren Interpolation wegen der grössere gleichzeitig mit A ausgeschrieben wird. Dieser von dem grösseren der gegebenen Logarithmen abgezogen giebt log a. Da die Zeichen ganz auf die Winkelfunctionen geschoben sind, so ist a positiv.

### *Die Additions- und Subtractions-Logarithmen.*

Diese Tafeln haben den Zweck, den Logarithmus der Summe zweier Zahlen oder den Logarithmus der Differenz zu finden, wenn die Logarithmen der Zahlen gegeben sind. Die Seiten 117 bis 121 sind für Addition bestimmt. Man geht mit der Differenz der Logarithmen, indem der grössere von dem um 10 Einheiten vergrösserten kleineren Logarithmen abgezogen wird, welche Differenz mit A bezeichnet ist, in die Tafel ein, entnimmt daraus die Zahl B, welche zum grösseren Logarithmus addirt den Logarithmus der Summe giebt. Sind 8,75321 — 10 und 0,13109 die gegebenen Logarithmen, so würde der erstere mit log b, der andere mit log a zu bezeichnen sein, man würde 8,75321 für 10 + lg b

erhalten und 8,62212 für A. Auf Seite 119 findet sich das zugehörige B = 0,01782, welches zu 0,13109 addirt den lg (a + b) = 0,14891 ergiebt.

Soll der Logarithmus der Differenz gefunden werden, so geht man wieder mit der Differenz der Logarithmen, jedoch so, dass der kleinere Logarithme vom grösseren abgezogen wird, welche jetzt mit B bezeichnet wird, in dieselbe Tafel ein, so lange diese Differenz 0,42 nicht übersteigt, und entnimmt die Zahl A, genau so, wie wenn zu einem Logarithmus die Zahl gesucht wird. Dieses A wird dann zu dem kleineren Logarithmen addirt und — 10 hinzugefügt, um den Logarithmen der Differenz a—b zu erhalten. Ist gegeben log a = 3,00175, log b = 2,85417, so stellt sich die Rechnung wie folgt:

| | |
|---|---|
| lg a | 3.00175 |
| lg b | 2.85417 |
| B | 0.14758 |
| A | 9.60711 nach Pag. 121 |
| lg (a—b) | 2.46128 = lg b + A — 10. |

Ist dagegen die Differenz der gegebenen Logarithmen grösser als 0,42, so geht man mit derselben, die wieder mit B bezeichnet wird, in die zweite Abtheilung Seite 122 bis 126, die nur für Subtraction gilt, ein und entnimmt das zugehörige C. Dann ist log (a — b) = lg a + C — 10. Wäre in dem obigen Beispiel für Addition auch der Logarithmus der Differenz gesucht, so würde man haben

| | |
|---|---|
| lg a | 0,13109 |
| lg b | 8,75321 — 10 |
| B | 1.37788 |
| C | 9.98142 nach Pag. 124 |
| lg (a—b) | 0.11251 = lg a + C — 10. |

## *Tafel der Quadrate der Zahlen von 0,000 bis 3,500.*

Diese Tafel ist dazu bestimmt, um bei der Anwendung der Methode der kleinsten Quadratsummen mit Leichtigkeit die Summe der Fehler-Quadrate bilden zu können, wobei vorzugsweise die Anwendung in der Geodäsie berücksichtigt ist, wo die übrig bleibenden Fehler in Secunden mit 3 De-

cimalstellen ausgedrückt sind, und selten über 3,5 hinausgehen. Hierfür giebt die Tafel die Quadrate unmittelbar bis auf 4 Decimalstellen. So ist das Quadrat von 0,879 = 0,7726 nach Pag. 129. Man kann aber auch über 3,5 hinaus bis zu 35,0 die Quadrate aus der Tafel entnehmen, wenn in der Columne N das Komma um eine Stelle weiter zur Rechten gedacht wird, und gleichzeitig in den Quadraten das Komma um zwei Stellen gerückt wird. Die Quadrate haben dann nur zwei Decimalstellen. So ist nach Pag. 129 das Quadrat von 8,793 = 77,31.

*Tafeln zur Bestimmung der Zeit nach Sonnenhöhen.*

Diese Tafeln haben den Zweck, um Jedermann, der im Besitze einer guten Uhr ist, in den Stand zu setzen, den Gang seiner Uhr zu controlliren, unabhängig von anderweiten Vergleichungen. Es ist hierzu eine kleine Rechnung erforderlich, die mit fünf Decimalstellen zu führen ist, und sich so an den Gebrauch einer fünfstelligen Tafel anreiht. In die Rechnung gehen ein die Höhe der Sonne, die Declination der Sonne und die geographische Länge und Breite. Die Höhe der Sonne wird am genauesten mit einem kleinen Theodoliten oder Spiegelsextanten genommen. Ingenieure, Feldmesser, ebenso die Lehrer der Mathematik und Physik, denen solche Instrumente zu Gebote stehen, werden die Höhe der Sonne bis auf ein Sechzigstel oder Hundertstel des Grades damit zu bestimmen vermögen. Auch Uhrmachern ist die Bekanntschaft mit solchen Instrumenten anzurathen, indem sie sich dadurch in den Stand setzen, die Zeit bis auf wenige Secunden genau zu ermitteln. Für Lehrer sind diese Messungen, die einfach und leicht auszuführen, ein belebendes Mittel für den Unterricht in der Mathematik, sowohl im Allgemeinen, als in der Anwendung der Logarithmen. Den Dilettanten, die, ohne im Besitze solcher besseren Instrumente zu sein, sich mit dieser Methode der Zeitbestimmung befreunden wollen, ist ein Sextant mit Diopteren zu empfehlen, wie solche von Herrn Mechanikus Bonsack hierselbst für den Preis von 4 Thlrn. angefertigt werden. Da

dieselben die Höhe der Sonne bis auf etwa ein Zehntelgrad genau angeben, so ist eine darauf gegründete Zeitbestimmung, die innerhalb der Minute richtig ist, immer noch ein werthvolles Resultat.

Die in die Rechnung eingehende Länge und Breite sind für den Ort der Beobachtung ein- für allemal aus einer guten Karte zu entnehmen. Die Länge ist von Berlin zu rechnen. Giebt die Karte die Länge von Ferro an, so ist solche von 31°, der Länge von Berlin, abzuziehen und mit Hülfe der Tafel Pag. 144 in Decimaltheile des Tages zu verwandeln, wodurch man die von Berlin aus gerechnete westliche Länge des Orts erhält. Diese Länge soll mit l bezeichnet werden. Liegt der Ort der Beobachtung östlich von Berlin, so wird l negativ. Die Breite des Orts ist in Graden und Decimaltheilen auszudrücken und es genügt, wenn die Hunderttheile richtig sind. Auf Seite 136 sind für einige Orte l, die westliche Länge von Berlin in Decimaltheilen des Tages, und $\varphi$, die geographische Breite in Graden und deren Decimaltheilen angegeben.

Die Declination der Sonne ist Seite 137 bis 142 für jeden Tag des Jahres angegeben. Sie gilt für den mittleren Mittag eines fingirten Jahres und muss mit Hülfe der Grösse k auf das betreffende Jahr reducirt werden. In Schaltjahren, die mit s bezeichnet sind, haben die Tage des Januar und Februar einen besondern Eingang, um einen Tag von dem in Gemeinjahren verschieden. Ist t die Zeit der Beobachtung, vom Mittage des Tages an gerechnet, Vormittags negativ, Nachmittags positiv und auf Decimaltheile des Tages reducirt, so ist k + l + t das Argument, mit welchem die Declination aus der Tafel zu entnehmen. Wäre z. B. am 10. Mai 1872 zu Braunschweig um 9 Uhr Vormittags eine Sonnenhöhe genommen, so würde t negativ sein, und da 9 Uhr vom Mittage 3 Stunden entfernt ist, nach Pag. 144, t = —0,125. Ferner ist nach Pag. 136 für 1872, k = + 0,758, für Braunschweig l = + 0,008, daher k + l + t = + 0,641. Hiermit ist nach Pag. 139 zwischen Mai 10, wo die Declination + 17.567 ist, nach Mai 11

hin, weil k + l + t positiv ist, zu interpoliren, also die Differenz 0,260 mit 0,641 zu multipliciren, welches 0,167 giebt, und dieser Betrag zu + 17,567 zu addiren, weil von Mai 10 nach Mai 11 die Declination wächst. Man erhält also für die Zeit der Beobachtung die Declination = + 17,734.

In Betreff der Höhe ist zu bemerken, dass mittelst eines Theodoliten oder Spiegel-Sextanten nicht die Höhe der Sonne direct, sondern nur die Höhe des obern oder unteren Randes beobachtet werden kann. Es muss daher die beobachtete Höhe noch um den Radius der Sonnenscheibe nach Pag. 143 vermehrt oder vermindert werden, je nachdem der untere oder obere Rand beobachtet ist. Zuvor wird die beobachtete Höhe um den Betrag der Refraction und Parallaxe berichtigt.

Die mittlere Refraction ist Pag. 143 angegeben, für geringere Höhen von Zehntel zu Zehntel-Grad, von 15 Grad Höhe an von Grad zu Grad. Kommt es auf grosse Genauigkeit an, so wird diese mittlere Refraction für Thermometer- und Barometerstand corrigirt, welches dadurch bewirkt wird, dass man aus den beiden kleinen Täfelchen für den betreffenden Thermometer- und Barometerstand die Correction für 0,1 entnimmt, solche zusammenaddirt und mit der in Zehntelgraden ausgedrückten mittleren Refraction multiplicirt. Dieser Betrag wird addirt oder subtrahirt, je nachdem das Zeichen der Summe + oder — ist. Wäre z. B. die beobachtete Höhe 12°, die Temperatur + 15°, das Barometer 27″ 3‴, so hätte man die mittlere Refraction = 0,074. Die Seitentäfelchen geben — 0,004 — 0,002 = — 0,006, welche Zahl mit 0,74 multiplicirt = — 0,004 giebt. Die Refraction ist also = 0,074 — 0,004 = 0,070. Diese Refraction ist von der beobachteten Höhe zu subtrahiren. Schliesslich wird noch die Parallaxe, welche aus dem dritten Täfelchen unten zu entnehmen ist, addirt. Dieses Täfelchen giebt für 12° 0,002 und man erhält somit die wahre Höhe des beobachteten Randes = 12,000 — 0,070 + 0,002 = 11,932.

Ist nun t der Stundenwinkel der Sonne, ausgedrückt in Stunden und deren Decimaltheilen, also 15.t derselbe

Winkel in Graden; ist ferner $\delta$ die Declination der Sonne für den Augenblick der Beobachtung, h die Höhe der Sonne und $\varphi$ die geographische Breite, so hat man

$$\text{Cos } 15.t = \frac{\text{Sin h} - \text{Sin } \varphi \text{ Sin } \delta}{\text{Cos } \varphi \text{ Cos } \delta}$$

Beispiel 1. Es sei

$$h = 37^{0}.170,\ \delta = +\ 3.913,\ \varphi = 50.75,$$

so hat man

| | | | | | |
|---|---|---|---|---|---|
| Sin h | 9.78117 | Sin $\varphi$ | 9.88896 | Cos $\varphi$ | 9.80120 |
| Sin $\varphi$ Sin $\delta$ | 8.72301 | Sin $\delta$ | 8.83405 | Cos $\delta$ | 9.99899 |
| diff | 1.05816 | Sin $\varphi$ Sin $\delta$ | 8.72301 | | 9.80019 |
| Pg. 124 C | 9.96025 | | | | |
| | 9.74142 | | | | |
| Cos $\varphi$ Cos $\delta$ | 9.80019 | | | | |
| Cos 15.t | 9.94123 | | | | |
| 15.t | 29.160 | t = | 1.9427 Stunden | | |
| | | = | $1^{h}\ 56^{m}\ 34^{s}$. | | |

Beispiel 2. Es sei 1872 Mai 10 zu Braunschweig mit einem Bonsack'schen Sextanten die Höhe der Sonne = 39,7 gefunden, die Uhr zeigte $8^{h}\ 58^{m}\ 10''$ Vormittags.

Nach Pag. 136 ist k = + 0,758, l = + 0,008, t nach 144 = — 0,126, also k + l + t = + 0,640. Die Declination der Sonne findet sich für Mai 10,640 . . + $17^{0}.734$ und die Zeitgleichung — $3^{m}\ 49^{s}$. Die Refraction, welche nach Pag. 143 . . 0,02 ist, könnte hier vernachlässigt werden, da die Höhe nur auf Zehntelgrade genau ist. Die Rechnung stellt sich demnach wie folgt:

| | | | | | |
|---|---|---|---|---|---|
| h | $39^{0}.7$ | Cos $\varphi$ | 9.78671 | Sin h | 9.80516 |
| Refr | — 0.02 | Cos $\delta$ | 9.97886 | Sin $\varphi$ Sin $\delta$ | 9.38185 |
| | 39.68 | Cos $\varphi$ Cos $\delta$ | 9.76557 | diff | 0.42331 |
| $\delta$ | + 17.734 | Sin $\varphi$ | 9.89812 | C | 9.79428 |
| $\varphi$ | + 52.270 | Sin $\delta$ | 9.48373 | | 9.59944 |
| | | Sin $\varphi$ Sin $\delta$ | 9.38185 | Cos $\varphi$ Cos $\delta$ | 9.76557 |
| | | | | Cos 15 t | 9.83387 |
| | | | | 15 t | 46.989 |
| | | | | t | 3.133 |
| | | | | = | $3^{h}\ 7^{m}\ 59^{s}$. |

Da Vormittags t negativ zu nehmen ist, so erhält man die Sonnenzeit

$$= 12^{h} - t = 8^{h}\ 52^{m}\ 1^{s}.$$

Die Zeitgleichung war — $3^m\ 49^s$, daher die mittlere Zeit $8^h\ 48^m\ 12^s$. Wird hiermit die Angabe der Uhr $8^h\ 58^m\ 10^s$ verglichen, so zeigt sich, dass die Uhr um $9^m\ 58^s$ vorging.

Beispiel 3. Vorausgesetzt, dass zu Neapel am 2. October 1874 Nachmittags $2^h\ 50^m\ 5^s$ die Höhe des unteren Sonnenrandes $29^o.278$ beobachtet sei. Thermometer 19.3 R., Barometer 28″ 3‴. So ist nach Pag. 136, k = + 0,274, l = — 0,002 und nach Pag. 144, t = + 0,118, daher das Argument für die Declination der Sonne und die Zeitgleichung k + l + t = Oct. 2,390. Hiermit erhält man Pag. 141

$\delta$ = — 3.644 und die Zeitgleichung = — $10^m\ 42^s$.

Ferner ist für die Höhe $29^o$ die mittlere Refraction 0,029. Die Correctionen wegen Temperatur und Barometerstand sind — 0,006 und + 0,002, zusammen — 0,004, welche Summe mit 0,29 multiplicirt — 0,001 giebt. Die Rechnung stellt sich demnach wie folgt:

| | | |
|---|---|---|
| Höhe des unteren Randes . . . . . | | 29.278 |
| Mittlere Refraction . . . . | 0.029 | |
| Barometer und Thermometer . | — 0.001 | — 0.028 |
| Wegen Refraction verbesserte Höhe . | | = 29.250 |
| Der Radius der Sonne . . . . . | | 0.267 |
| Höhe der Sonne h . . . . . . | | = 29.517 |

| | | | |
|---|---|---|---|
| h = | $29^o.517$ | Sin h | 9.69257 |
| $\delta$ = | — 3.644 | Sin $\varphi$ Sin $\delta$ | 8.61866 n |
| $\varphi$ = | + 40.834 | diff | 8.92609 = A |
| Sin $\varphi$ | 9.81549 | | 0.03517 = B |
| Sin $\delta$ | 8.80317 n | | 9.72774 |
| | 8.61866 n | Cos $\varphi$ Cos $\delta$ | 9.87799 |
| Cos $\varphi$ | 9.87887 | Cos 15 t | 9.84975 |
| Cos $\delta$ | 9.99912 | 15 t | 44.965 |
| | 9.87799 | | t = 2.9977 |
| | | | = $2^h\ 59^m\ 52^s$ |

| | | | |
|---|---|---|---|
| Zeitgleichung . | | — 10 | 42 |
| Mittlere Zeit . . | 2 | 49 | 10 |
| Uhrangabe . . | 2 | 50 | 5 |
| Daher voreilend | 0 | 0 | 55 |

In diesem Beispiele musste zu den Logarithmen von Sin h und Sin $\varphi$ Sin $\delta$, da letztere Zahl negativ ist, der Logarithmus der Summe gesucht werden, während, so lange $\delta$ positiv ist, der Logarithmus der Differenz zu nehmen ist.

Für einen bleibenden Wohnsitz lassen sich die Tafeln bequemer einrichten, weil alsdann $\varphi$ denselben Werth behält. Setzt man nämlich

$$\frac{1}{\cos\varphi\cos\delta} = m$$
$$\operatorname{tg}\varphi\ \operatorname{tg}\delta = -n,$$

so hat man

$$\operatorname{Cos} 15\,t = m \operatorname{Sin} h + n.$$

Berechnet man für jede in der vorigen Tafel angegebene Declination die Werthe von log m und log n, so erhält man eine neue Tafel, welche für den bestimmten Parallel, dessen Breite $\varphi$ in Rechnung gezogen ist, gilt. Beispielsweise ist für die Breite von Berlin, $\varphi = 52{,}505$, diese Rechnung durchgeführt. Die Werthe von log m und log n sind Pag. 145—148 für jeden Tag angegeben, zwischen welchen ebenso, wie in jener Tafel, mit dem Argument $k + l + t$ interpolirt wird. Die Interpolation von log m macht keine Schwierigkeit, dagegen gehen die Werthe von n zur Zeit der Aequinoctien durch 0, deren Logarithmen also durch $\infty$, so dass keine Interpolation mehr möglich ist. Für diese Zeiten ist deshalb Pag. 151 noch eine Tafel der natürlichen Zahlen von n gegeben, welche in diesen Fällen zu benutzen ist. Ist daraus n entnommen, so kann leicht der zugehörige lg n aufgeschlagen werden.

B e i s p i e l 1. Den 28. Februar 1872 wurde Nachmittags die Sonnenhöhe $= 21{,}14$ gefunden. Die Uhr zeigte $2^h\ 45^m\ 35^s$, die Refraction ist bereits angebracht. Man hat $k = +\ 0{,}758$, $l = 0$, $t = +\ 0{,}116$, $k + l + t = +\ 0{,}874$. Hiermit erhält man nach Pag. 145 für Febr. 28,874, Datum der Schaltjahre,

| | | | |
|---|---|---|---|
| lg m = 0.21993 | m Sin h | 9.77701 | |
| lg n = 9.26712 | n | 9.26712 | |
| lg Sin h = 9.55708 | A | 9.49011 | |
| | B | 0.11698 | |
| | Cos 15 t | 9.89399 | |
| | 15 t | 38.427 | |
| | t | 2.5618 | |
| | | $= 2^h\ 33^m\ 42^s$ | |

| | | | |
|---|---|---|---|
| Zeitgleichung Pag. 137 . . . . . . | + | 12 | 50 |
| Mittlere Zeit . . . | 2 | 46 | 32 |
| Angabe der Uhr . . . . . . | 2 | 45 | 35 |
| Correction der Uhr . . . . . | +0 | 0 | 57 |

Beispiel 2. Wäre 1887 Sept. 12 Vormittags $8^h\ 0^m\ 25^s$ die Sonnenhöhe 21,308 gefunden, bereits für Refraction, Parallaxe und Halbmesser corrigirt, so hätte man k = + 0,124, l = 0, t = — 0,167, k + l + t = — 0,043. Hiermit erhielte man

| | | | | |
|---|---|---|---|---|
| Pag. | 149 | Sept 11.957 . . | lg m = | 0.21679 |
| „ | 151 | „ „ . . | n = | — 0.09772 |
| „ | 141 | Zeitgleichung . . | — | $3^m\ 40^s$ |

Die Rechnung würde sich daher wie folgt stellen:

| | | | |
|---|---|---|---|
| lg Sin h | 9.56036 | 15 t | 59°.932 |
| lg m | 0.21672 | t | 3.9955 |
| | 9.77708 | | = $3^h\ 59^m\ 44^s$ |
| lg n | 8.98998 n | 12 — t = | 8 0 16 |
| B | 0.78810 | Zeitgl. . | — 3 40 |
| C | 9.92278 | M. Zeit . | 7 56 36 |
| Cos 15 t | 9.69986 | Die Uhrangabe war | 8 0 25 |
| | | Correction der Uhr | — 0 3 49 |

Es möge genügen, an diesen Beispielen gezeigt zu haben, dass die Rechnung leicht und einfach ist, und von jedem Dilettanten ausgeführt werden kann. Im Allgemeinen dürfte noch bemerkt werden, dass zu kleine Höhen nicht vortheilhaft sind, weil alsdann die Refraction zu gross wird und das Resultat unsicher macht. Ebenso sind Höhen kurz vor oder nach Mittag zu vermeiden, weil dann ein kleiner Fehler in der Sonnenhöhe einen grossen Fehler im Resultat zur Folge hat. Die genauesten Zeitbestimmungen erhält man, wenn die Sonne im Osten oder Westen steht, doch ist dieses nur anwendbar, wenn die Sonne nördliche Declination hat, oder von der Frühlings- bis zur Herbstnachtgleiche.

*Tafel zur Berechnung der Höhen nach Barometer-Messungen.*

Die von Gauss eingeführten Tafeln sind wegen ihrer leichten und einfachen Anwendung vor vielen andern vorzuziehen. Der Gebrauch derselben ist am Fusse der Tafel durch ein Beispiel erläutert.

*Zeit- und Festrechnung.*

Es ist hier der Versuch gemacht, mit Hülfe einiger Täfelchen das Osterfest und die davon abhängenden Feste

für ein beliebiges Jahr des Julianischen und Gregorianischen Kalenders leicht bestimmen zu können. Statt des sonst gebräuchlichen Sonntagsbuchstaben ist das Datum der Sonntage eingeführt. Ferner ist die Epakte durch Täfelchen, welche den cyklischen Frühlings-Vollmond angeben, umgangen. Diese Täfelchen ändern sich im Gregorianischen Kalender von Zeit zu Zeit, und es sind hier die drei von 1582 bis 2200 geltenden angegeben. Das für den Julianischen Kalender angegebene bleibt für alle Zeiten dasselbe. Der Gebrauch ist bei den Täfelchen selbst erläutert.

---

DIE

# LOGARITHMEN

DER

## ZAHLEN

VON 1 BIS 10000.

| N. | Log. | N. | Log. | N. | Log. | N. | Log. | N. | Log. |
|---|---|---|---|---|---|---|---|---|---|
| 0 | — | 50 | 69897 | 100 | 00000 | 150 | 17609 | 200 | 30103 |
| 1 | 00000 | 51 | 70757 | 101 | 00432 | 151 | 17898 | 201 | 30320 |
| 2 | 30103 | 52 | 71600 | 102 | 00860 | 152 | 18184 | 202 | 30535 |
| 3 | 47712 | 53 | 72428 | 103 | 01284 | 153 | 18469 | 203 | 30750 |
| 4 | 60206 | 54 | 73239 | 104 | 01703 | 154 | 18752 | 204 | 30963 |
| 5 | 69897 | 55 | 74036 | 105 | 02119 | 155 | 19033 | 205 | 31175 |
| 6 | 77815 | 56 | 74819 | 106 | 02531 | 156 | 19312 | 206 | 31387 |
| 7 | 84510 | 57 | 75587 | 107 | 02938 | 157 | 19590 | 207 | 31597 |
| 8 | 90309 | 58 | 76343 | 108 | 03342 | 158 | 19866 | 208 | 31806 |
| 9 | 95424 | 59 | 77085 | 109 | 03743 | 159 | 20140 | 209 | 32015 |
| 10 | 00000 | 60 | 77815 | 110 | 04139 | 160 | 20412 | 210 | 32222 |
| 11 | 04139 | 61 | 78533 | 111 | 04532 | 161 | 20683 | 211 | 32428 |
| 12 | 07918 | 62 | 79239 | 112 | 04922 | 162 | 20952 | 212 | 32634 |
| 13 | 11394 | 63 | 79934 | 113 | 05308 | 163 | 21219 | 213 | 32838 |
| 14 | 14613 | 64 | 80618 | 114 | 05690 | 164 | 21484 | 214 | 33041 |
| 15 | 17609 | 65 | 81291 | 115 | 06070 | 165 | 21748 | 215 | 33244 |
| 16 | 20412 | 66 | 81954 | 116 | 06446 | 166 | 22011 | 216 | 33445 |
| 17 | 23045 | 67 | 82607 | 117 | 06819 | 167 | 22272 | 217 | 33646 |
| 18 | 25527 | 68 | 83251 | 118 | 07188 | 168 | 22531 | 218 | 33846 |
| 19 | 27875 | 69 | 83885 | 119 | 07555 | 169 | 22789 | 219 | 34044 |
| 20 | 30103 | 70 | 84510 | 120 | 07918 | 170 | 23045 | 220 | 34242 |
| 21 | 32222 | 71 | 85126 | 121 | 08279 | 171 | 23300 | 221 | 34439 |
| 22 | 34242 | 72 | 85733 | 122 | 08636 | 172 | 23553 | 222 | 34635 |
| 23 | 36173 | 73 | 86332 | 123 | 08991 | 173 | 23805 | 223 | 34830 |
| 24 | 38021 | 74 | 86923 | 124 | 09342 | 174 | 24055 | 224 | 35025 |
| 25 | 39794 | 75 | 87506 | 125 | 09691 | 175 | 24304 | 225 | 35218 |
| 26 | 41497 | 76 | 88081 | 126 | 10037 | 176 | 24551 | 226 | 35411 |
| 27 | 43136 | 77 | 88649 | 127 | 10380 | 177 | 24797 | 227 | 35603 |
| 28 | 44716 | 78 | 89209 | 128 | 10721 | 178 | 25042 | 228 | 35793 |
| 29 | 46240 | 79 | 89763 | 129 | 11059 | 179 | 25285 | 229 | 35984 |
| 30 | 47712 | 80 | 90309 | 130 | 11394 | 180 | 25527 | 230 | 36173 |
| 31 | 49136 | 81 | 90849 | 131 | 11727 | 181 | 25768 | 231 | 36361 |
| 32 | 50515 | 82 | 91381 | 132 | 12057 | 182 | 26007 | 232 | 36549 |
| 33 | 51851 | 83 | 91908 | 133 | 12385 | 183 | 26245 | 233 | 36736 |
| 34 | 53148 | 84 | 92428 | 134 | 12710 | 184 | 26482 | 234 | 36922 |
| 35 | 54407 | 85 | 92942 | 135 | 13033 | 185 | 26717 | 235 | 37107 |
| 36 | 55630 | 86 | 93450 | 136 | 13354 | 186 | 26951 | 236 | 37291 |
| 37 | 56820 | 87 | 93952 | 137 | 13672 | 187 | 27184 | 237 | 37475 |
| 38 | 57978 | 88 | 94448 | 138 | 13988 | 188 | 27416 | 238 | 37658 |
| 39 | 59106 | 89 | 94939 | 139 | 14301 | 189 | 27646 | 239 | 37840 |
| 40 | 60206 | 90 | 95424 | 140 | 14613 | 190 | 27875 | 240 | 38021 |
| 41 | 61278 | 91 | 95904 | 141 | 14922 | 191 | 28103 | 241 | 38202 |
| 42 | 62325 | 92 | 96379 | 142 | 15229 | 192 | 28330 | 242 | 38382 |
| 43 | 63347 | 93 | 96848 | 143 | 15534 | 193 | 28556 | 243 | 38561 |
| 44 | 64345 | 94 | 97313 | 144 | 15836 | 194 | 28780 | 244 | 38739 |
| 45 | 65321 | 95 | 97772 | 145 | 16137 | 195 | 29003 | 245 | 38917 |
| 46 | 66276 | 96 | 98227 | 146 | 16435 | 196 | 29226 | 246 | 39094 |
| 47 | 67210 | 97 | 98677 | 147 | 16732 | 197 | 29447 | 247 | 39270 |
| 48 | 68124 | 98 | 99123 | 148 | 17026 | 198 | 29667 | 248 | 39445 |
| 49 | 69020 | 99 | 99564 | 149 | 17319 | 199 | 29885 | 249 | 39620 |
| 50 | 69897 | 100 | 00000 | 150 | 17609 | 200 | 30103 | 250 | 39794 |
| N. | Log. | N. | Log. | N. | Log. | N. | Log. | N. | Log. |

| N. | Log. | N. | Log. | N. | Log. | N. | Log. | N. | Log. |
|---|---|---|---|---|---|---|---|---|---|
| 250 | 39794 | 300 | 47712 | 350 | 54407 | 400 | 60206 | 450 | 65321 |
| 251 | 39967 | 301 | 47857 | 351 | 54531 | 401 | 60314 | 451 | 65418 |
| 252 | 40140 | 302 | 48001 | 352 | 54654 | 402 | 60423 | 452 | 65514 |
| 253 | 40312 | 303 | 48144 | 353 | 54777 | 403 | 60531 | 453 | 65610 |
| 254 | 40483 | 304 | 48287 | 354 | 54900 | 404 | 60638 | 454 | 65706 |
| 255 | 40654 | 305 | 48430 | 355 | 55023 | 405 | 60746 | 455 | 65801 |
| 256 | 40824 | 306 | 48572 | 356 | 55145 | 406 | 60853 | 456 | 65896 |
| 257 | 40993 | 307 | 48714 | 357 | 55267 | 407 | 60959 | 457 | 65992 |
| 258 | 41162 | 308 | 48855 | 358 | 55388 | 408 | 61066 | 458 | 66087 |
| 259 | 41330 | 309 | 48996 | 359 | 55509 | 409 | 61172 | 459 | 66181 |
| 260 | 41497 | 310 | 49136 | 360 | 55630 | 410 | 61278 | 460 | 66276 |
| 261 | 41664 | 311 | 49276 | 361 | 55751 | 411 | 61384 | 461 | 66370 |
| 262 | 41830 | 312 | 49415 | 362 | 55871 | 412 | 61490 | 462 | 66464 |
| 263 | 41996 | 313 | 49554 | 363 | 55991 | 413 | 61595 | 463 | 66558 |
| 264 | 42160 | 314 | 49693 | 364 | 56110 | 414 | 61700 | 464 | 66652 |
| 265 | 42325 | 315 | 49831 | 365 | 56229 | 415 | 61805 | 465 | 66745 |
| 266 | 42488 | 316 | 49969 | 366 | 56348 | 416 | 61909 | 466 | 66839 |
| 267 | 42651 | 317 | 50106 | 367 | 56467 | 417 | 62014 | 467 | 66932 |
| 268 | 42813 | 318 | 50243 | 368 | 56585 | 418 | 62118 | 468 | 67025 |
| 269 | 42975 | 319 | 50379 | 369 | 56703 | 419 | 62221 | 469 | 67117 |
| 270 | 43136 | 320 | 50515 | 370 | 56820 | 420 | 62325 | 470 | 67210 |
| 271 | 43297 | 321 | 50651 | 371 | 56937 | 421 | 62428 | 471 | 67302 |
| 272 | 43457 | 322 | 50786 | 372 | 57054 | 422 | 62531 | 472 | 67394 |
| 273 | 43616 | 323 | 50920 | 373 | 57171 | 423 | 62634 | 473 | 67486 |
| 274 | 43775 | 324 | 51055 | 374 | 57287 | 424 | 62737 | 474 | 67578 |
| 275 | 43933 | 325 | 51188 | 375 | 57403 | 425 | 62839 | 475 | 67669 |
| 276 | 44091 | 326 | 51322 | 376 | 57519 | 426 | 62941 | 476 | 67761 |
| 277 | 44248 | 327 | 51455 | 377 | 57634 | 427 | 63043 | 477 | 67852 |
| 278 | 44404 | 328 | 51587 | 378 | 57749 | 428 | 63144 | 478 | 67943 |
| 279 | 44560 | 329 | 51720 | 379 | 57864 | 429 | 63246 | 479 | 68034 |
| 280 | 44716 | 330 | 51851 | 380 | 57978 | 430 | 63347 | 480 | 68124 |
| 281 | 44871 | 331 | 51983 | 381 | 58092 | 431 | 63448 | 481 | 68215 |
| 282 | 45025 | 332 | 52114 | 382 | 58206 | 432 | 63548 | 482 | 68305 |
| 283 | 45179 | 333 | 52244 | 383 | 58320 | 433 | 63649 | 483 | 68395 |
| 284 | 45332 | 334 | 52375 | 384 | 58433 | 434 | 63749 | 484 | 68485 |
| 285 | 45484 | 335 | 52504 | 385 | 58546 | 435 | 63849 | 485 | 68574 |
| 286 | 45637 | 336 | 52634 | 386 | 58659 | 436 | 63949 | 486 | 68664 |
| 287 | 45788 | 337 | 52763 | 387 | 58771 | 437 | 64048 | 487 | 68753 |
| 288 | 45939 | 338 | 52892 | 388 | 58883 | 438 | 64147 | 488 | 68842 |
| 289 | 46090 | 339 | 53020 | 389 | 58995 | 439 | 64246 | 489 | 68931 |
| 290 | 46240 | 340 | 53148 | 390 | 59106 | 440 | 64345 | 490 | 69020 |
| 291 | 46389 | 341 | 53275 | 391 | 59218 | 441 | 64444 | 491 | 69108 |
| 292 | 46538 | 342 | 53403 | 392 | 59329 | 442 | 64542 | 492 | 69197 |
| 293 | 46687 | 343 | 53529 | 393 | 59439 | 443 | 64640 | 493 | 69285 |
| 294 | 46835 | 344 | 53656 | 394 | 59550 | 444 | 64738 | 494 | 69373 |
| 295 | 46982 | 345 | 53782 | 395 | 59660 | 445 | 64836 | 495 | 69461 |
| 296 | 47129 | 346 | 53908 | 396 | 59770 | 446 | 64933 | 496 | 69548 |
| 297 | 47276 | 347 | 54033 | 397 | 59879 | 447 | 65031 | 497 | 69636 |
| 298 | 47422 | 348 | 54158 | 398 | 59988 | 448 | 65128 | 498 | 69723 |
| 299 | 47567 | 349 | 54283 | 399 | 60097 | 449 | 65225 | 499 | 69810 |
| 300 | 47712 | 350 | 54407 | 400 | 60206 | 450 | 65321 | 500 | 69897 |
| N. | Log. | N. | Log. | N. | Log. | N. | Log. | N. | Log. |

| N. | Log. | N. | Log. | N. | Log. | N. | Log. | N. | Log. |
|---|---|---|---|---|---|---|---|---|---|
| 500 | 69897 | 550 | 74036 | 600 | 77815 | 650 | 81291 | 700 | 84510 |
| 501 | 69984 | 551 | 74115 | 601 | 77887 | 651 | 81358 | 701 | 84572 |
| 502 | 70070 | 552 | 74194 | 602 | 77960 | 652 | 81425 | 702 | 84634 |
| 503 | 70157 | 553 | 74273 | 603 | 78032 | 653 | 81491 | 703 | 84696 |
| 504 | 70243 | 554 | 74351 | 604 | 78104 | 654 | 81558 | 704 | 84757 |
| 505 | 70329 | 555 | 74429 | 605 | 78176 | 655 | 81624 | 705 | 84819 |
| 506 | 70415 | 556 | 74507 | 606 | 78247 | 656 | 81690 | 706 | 84880 |
| 507 | 70501 | 557 | 74586 | 607 | 78319 | 657 | 81757 | 707 | 84942 |
| 508 | 70586 | 558 | 74663 | 608 | 78390 | 658 | 81823 | 708 | 85003 |
| 509 | 70672 | 559 | 74741 | 609 | 78462 | 659 | 81889 | 709 | 85065 |
| 510 | 70757 | 560 | 74819 | 610 | 78533 | 660 | 81954 | 710 | 85126 |
| 511 | 70842 | 561 | 74896 | 611 | 78604 | 661 | 82020 | 711 | 85187 |
| 512 | 70927 | 562 | 74974 | 612 | 78675 | 662 | 82086 | 712 | 85248 |
| 513 | 71012 | 563 | 75051 | 613 | 78746 | 663 | 82151 | 713 | 85309 |
| 514 | 71096 | 564 | 75128 | 614 | 78817 | 664 | 82217 | 714 | 85370 |
| 515 | 71181 | 565 | 75205 | 615 | 78888 | 665 | 82282 | 715 | 85431 |
| 516 | 71265 | 566 | 75282 | 616 | 78958 | 666 | 82347 | 716 | 85491 |
| 517 | 71349 | 567 | 75358 | 617 | 79029 | 667 | 82413 | 717 | 85552 |
| 518 | 71433 | 568 | 75435 | 618 | 79099 | 668 | 82478 | 718 | 85612 |
| 519 | 71517 | 569 | 75511 | 619 | 79169 | 669 | 82543 | 719 | 85673 |
| 520 | 71600 | 570 | 75587 | 620 | 79239 | 670 | 82607 | 720 | 85733 |
| 521 | 71684 | 571 | 75664 | 621 | 79309 | 671 | 82672 | 721 | 85794 |
| 522 | 71767 | 572 | 75740 | 622 | 79379 | 672 | 82737 | 722 | 85854 |
| 523 | 71850 | 573 | 75815 | 623 | 79449 | 673 | 82802 | 723 | 85914 |
| 524 | 71933 | 574 | 75891 | 624 | 79518 | 674 | 82866 | 724 | 85974 |
| 525 | 72016 | 575 | 75967 | 625 | 79588 | 675 | 82930 | 725 | 86034 |
| 526 | 72099 | 576 | 76042 | 626 | 79657 | 676 | 82995 | 726 | 86094 |
| 527 | 72181 | 577 | 76118 | 627 | 79727 | 677 | 83059 | 727 | 86153 |
| 528 | 72263 | 578 | 76193 | 628 | 79796 | 678 | 83123 | 728 | 86213 |
| 529 | 72346 | 579 | 76268 | 629 | 79865 | 679 | 83187 | 729 | 86273 |
| 530 | 72428 | 580 | 76343 | 630 | 79934 | 680 | 83251 | 730 | 86332 |
| 531 | 72509 | 581 | 76418 | 631 | 80003 | 681 | 83315 | 731 | 86392 |
| 532 | 72591 | 582 | 76492 | 632 | 80072 | 682 | 83378 | 732 | 86451 |
| 533 | 72673 | 583 | 76567 | 633 | 80140 | 683 | 83442 | 733 | 86510 |
| 534 | 72754 | 584 | 76641 | 634 | 80209 | 684 | 83506 | 734 | 86570 |
| 535 | 72835 | 585 | 76716 | 635 | 80277 | 685 | 83569 | 735 | 86629 |
| 536 | 72916 | 586 | 76790 | 636 | 80346 | 686 | 83632 | 736 | 86688 |
| 537 | 72997 | 587 | 76864 | 637 | 80414 | 687 | 83696 | 737 | 86747 |
| 538 | 73078 | 588 | 76938 | 638 | 80482 | 688 | 83759 | 738 | 86806 |
| 539 | 73159 | 589 | 77012 | 639 | 80550 | 689 | 83822 | 739 | 86864 |
| 540 | 73239 | 590 | 77085 | 640 | 80618 | 690 | 83885 | 740 | 86923 |
| 541 | 73320 | 591 | 77159 | 641 | 80686 | 691 | 83948 | 741 | 86982 |
| 542 | 73400 | 592 | 77232 | 642 | 80754 | 692 | 84011 | 742 | 87040 |
| 543 | 73480 | 593 | 77305 | 643 | 80821 | 693 | 84073 | 743 | 87099 |
| 544 | 73560 | 594 | 77379 | 644 | 80889 | 694 | 84136 | 744 | 87157 |
| 545 | 73640 | 595 | 77452 | 645 | 80956 | 695 | 84198 | 745 | 87216 |
| 546 | 73719 | 596 | 77525 | 646 | 81023 | 696 | 84261 | 746 | 87274 |
| 547 | 73799 | 597 | 77597 | 647 | 81090 | 697 | 84323 | 747 | 87332 |
| 548 | 73878 | 598 | 77670 | 648 | 81158 | 698 | 84386 | 748 | 87390 |
| 549 | 73957 | 599 | 77743 | 649 | 81224 | 699 | 84448 | 749 | 87448 |
| 550 | 74036 | 600 | 77815 | 650 | 81291 | 700 | 84510 | 750 | 87506 |
| N | Log. | N. | Log. | N. | Log. | N. | Log. | N. | Log. |

| N. | Log. | N. | Log. | N. | Log. | N. | Log. | N. | Log. |
|---|---|---|---|---|---|---|---|---|---|
| 750 | 87506 | 800 | 90309 | 850 | 92942 | 900 | 95424 | 950 | 97772 |
| 751 | 87564 | 801 | 90363 | 851 | 92993 | 901 | 95472 | 951 | 97818 |
| 752 | 87622 | 802 | 90417 | 852 | 93044 | 902 | 95521 | 952 | 97864 |
| 753 | 87679 | 803 | 90472 | 853 | 93095 | 903 | 95569 | 953 | 97909 |
| 754 | 87737 | 804 | 90526 | 854 | 93146 | 904 | 95617 | 954 | 97955 |
| 755 | 87795 | 805 | 90580 | 855 | 93197 | 905 | 95665 | 955 | 98000 |
| 756 | 87852 | 806 | 90634 | 856 | 93247 | 906 | 95713 | 956 | 98046 |
| 757 | 87910 | 807 | 90687 | 857 | 93298 | 907 | 95761 | 957 | 98091 |
| 758 | 87967 | 808 | 90741 | 858 | 93349 | 908 | 95809 | 958 | 98137 |
| 759 | 88024 | 809 | 90795 | 859 | 93399 | 909 | 95856 | 959 | 98182 |
| 760 | 88081 | 810 | 90849 | 860 | 93450 | 910 | 95904 | 960 | 98227 |
| 761 | 88138 | 811 | 90902 | 861 | 93500 | 911 | 95952 | 961 | 98272 |
| 762 | 88195 | 812 | 90956 | 862 | 93551 | 912 | 95999 | 962 | 98318 |
| 763 | 88252 | 813 | 91009 | 863 | 93601 | 913 | 96047 | 963 | 98363 |
| 764 | 88309 | 814 | 91062 | 864 | 93651 | 914 | 96095 | 964 | 98408 |
| 765 | 88366 | 815 | 91116 | 865 | 93702 | 915 | 96142 | 965 | 98453 |
| 766 | 88423 | 816 | 91169 | 866 | 93752 | 916 | 96190 | 966 | 98498 |
| 767 | 88480 | 817 | 91222 | 867 | 93802 | 917 | 96237 | 967 | 98543 |
| 768 | 88536 | 818 | 91275 | 868 | 93852 | 918 | 96284 | 968 | 98588 |
| 769 | 88593 | 819 | 91328 | 869 | 93902 | 919 | 96332 | 969 | 98632 |
| 770 | 88649 | 820 | 91381 | 870 | 93952 | 920 | 96379 | 970 | 98677 |
| 771 | 88705 | 821 | 91434 | 871 | 94002 | 921 | 96426 | 971 | 98722 |
| 772 | 88762 | 822 | 91487 | 872 | 94052 | 922 | 96473 | 972 | 98767 |
| 773 | 88818 | 823 | 91540 | 873 | 94101 | 923 | 96520 | 973 | 98811 |
| 774 | 88874 | 824 | 91593 | 874 | 94151 | 924 | 96567 | 974 | 98856 |
| 775 | 88930 | 825 | 91645 | 875 | 94201 | 925 | 96614 | 975 | 98900 |
| 776 | 88986 | 826 | 91698 | 876 | 94250 | 926 | 96661 | 976 | 98945 |
| 777 | 89042 | 827 | 91751 | 877 | 94300 | 927 | 96708 | 977 | 98989 |
| 778 | 89098 | 828 | 91803 | 878 | 94349 | 928 | 96755 | 978 | 99034 |
| 779 | 89154 | 829 | 91855 | 879 | 94399 | 929 | 96802 | 979 | 99078 |
| 780 | 89209 | 830 | 91908 | 880 | 94448 | 930 | 96848 | 980 | 99123 |
| 781 | 89265 | 831 | 91960 | 881 | 94498 | 931 | 96895 | 981 | 99167 |
| 782 | 89321 | 832 | 92012 | 882 | 94547 | 932 | 96942 | 982 | 99211 |
| 783 | 89376 | 833 | 92065 | 883 | 94596 | 933 | 96988 | 983 | 99255 |
| 784 | 89432 | 834 | 92117 | 884 | 94645 | 934 | 97035 | 984 | 99300 |
| 785 | 89487 | 835 | 92169 | 885 | 94694 | 935 | 97081 | 985 | 99344 |
| 786 | 89542 | 836 | 92221 | 886 | 94743 | 936 | 97128 | 986 | 99388 |
| 787 | 89597 | 837 | 92273 | 887 | 94792 | 937 | 97174 | 987 | 99432 |
| 788 | 89653 | 838 | 92324 | 888 | 94841 | 938 | 97220 | 988 | 99476 |
| 789 | 89708 | 839 | 92376 | 889 | 94890 | 939 | 97267 | 989 | 99520 |
| 790 | 89763 | 840 | 92428 | 890 | 94939 | 940 | 97313 | 990 | 99564 |
| 791 | 89818 | 841 | 92480 | 891 | 94988 | 941 | 97359 | 991 | 99607 |
| 792 | 89873 | 842 | 92531 | 892 | 95036 | 942 | 97405 | 992 | 99651 |
| 793 | 89927 | 843 | 92583 | 893 | 95085 | 943 | 97451 | 993 | 99695 |
| 794 | 89982 | 844 | 92634 | 894 | 95134 | 944 | 97497 | 994 | 99739 |
| 795 | 90037 | 845 | 92686 | 895 | 95182 | 945 | 97543 | 995 | 99782 |
| 796 | 90091 | 846 | 92737 | 896 | 95231 | 946 | 97589 | 996 | 99826 |
| 797 | 90146 | 847 | 92788 | 897 | 95279 | 947 | 97635 | 997 | 99870 |
| 798 | 90200 | 848 | 92840 | 898 | 95328 | 948 | 97681 | 998 | 99913 |
| 799 | 90255 | 849 | 92891 | 899 | 95376 | 949 | 97727 | 999 | 99957 |
| 800 | 90309 | 850 | 92942 | 900 | 95424 | 950 | 97772 | 1000 | 00000 |
| N. | Log. | N. | Log. | N. | Log. | N. | Log. | N. | Log. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | 0 0000 | 0043 | 0087 | 0130 | 0173 | 0217 | 0260 | 0303 | 0346 | 0389 |
| 101 | 0432 | 0475 | 0518 | 0561 | 0604 | 0647 | 0689 | 0732 | 0775 | 0817 |
| 102 | 0860 | 0903 | 0945 | 0988 | 1030 | 1072 | 1115 | 1157 | 1199 | 1242 |
| 103 | 1284 | 1326 | 1368 | 1410 | 1452 | 1494 | 1536 | 1578 | 1620 | 1662 |
| 104 | 1703 | 1745 | 1787 | 1828 | 1870 | 1912 | 1953 | 1995 | 2036 | 2078 |
| 105 | 0 2119 | 2160 | 2202 | 2243 | 2284 | 2325 | 2366 | 2407 | 2449 | 2490 |
| 106 | 2531 | 2572 | 2612 | 2653 | 2694 | 2735 | 2776 | 2816 | 2857 | 2898 |
| 107 | 2938 | 2979 | 3019 | 3060 | 3100 | 3141 | 3181 | 3222 | 3262 | 3302 |
| 108 | 3342 | 3383 | 3423 | 3463 | 3503 | 3543 | 3583 | 3623 | 3663 | 3703 |
| 109 | 3743 | 3782 | 3822 | 3862 | 3902 | 3941 | 3981 | 4021 | 4060 | 4100 |
| 110 | 0 4139 | 4179 | 4218 | 4258 | 4297 | 4336 | 4376 | 4415 | 4454 | 4493 |
| 111 | 4532 | 4571 | 4610 | 4650 | 4689 | 4727 | 4766 | 4805 | 4844 | 4883 |
| 112 | 4922 | 4961 | 4999 | 5038 | 5077 | 5115 | 5154 | 5192 | 5231 | 5269 |
| 113 | 5308 | 5346 | 5385 | 5423 | 5461 | 5500 | 5538 | 5576 | 5614 | 5652 |
| 114 | 5690 | 5729 | 5767 | 5805 | 5843 | 5881 | 5918 | 5956 | 5994 | 6032 |
| 115 | 0 6070 | 6108 | 6145 | 6183 | 6221 | 6258 | 6296 | 6333 | 6371 | 6408 |
| 116 | 6446 | 6483 | 6521 | 6558 | 6595 | 6633 | 6670 | 6707 | 6744 | 6781 |
| 117 | 6819 | 6856 | 6893 | 6930 | 6967 | 7004 | 7041 | 7078 | 7115 | 7151 |
| 118 | 7188 | 7225 | 7262 | 7298 | 7335 | 7372 | 7408 | 7445 | 7482 | 7518 |
| 119 | 7555 | 7591 | 7628 | 7664 | 7700 | 7737 | 7773 | 7809 | 7846 | 7882 |
| 120 | 0 7918 | 7954 | 7990 | 8027 | 8063 | 8099 | 8135 | 8171 | 8207 | 8243 |
| 121 | 8279 | 8314 | 8350 | 8386 | 8422 | 8458 | 8493 | 8529 | 8565 | 8600 |
| 122 | 8636 | 8672 | 8707 | 8743 | 8778 | 8814 | 8849 | 8884 | 8920 | 8955 |
| 123 | 8991 | 9026 | 9061 | 9096 | 9132 | 9167 | 9202 | 9237 | 9272 | 9307 |
| 124 | 9342 | 9377 | 9412 | 9447 | 9482 | 9517 | 9552 | 9587 | 9621 | 9656 |
| 125 | 0 9691 | 9726 | 9760 | 9795 | 9830 | 9864 | 9899 | 9934 | 9968 | 0003 |
| 126 | 1 0037 | 0072 | 0106 | 0140 | 0175 | 0209 | 0243 | 0278 | 0312 | 0346 |
| 127 | 0380 | 0415 | 0449 | 0483 | 0517 | 0551 | 0585 | 0619 | 0653 | 0687 |
| 128 | 0721 | 0755 | 0789 | 0823 | 0857 | 0890 | 0924 | 0958 | 0992 | 1025 |
| 129 | 1059 | 1093 | 1126 | 1160 | 1193 | 1227 | 1261 | 1294 | 1327 | 1361 |
| 130 | 1 1394 | 1428 | 1461 | 1494 | 1528 | 1561 | 1594 | 1628 | 1661 | 1694 |
| 131 | 1727 | 1760 | 1793 | 1826 | 1860 | 1893 | 1926 | 1959 | 1992 | 2024 |
| 132 | 2057 | 2090 | 2123 | 2156 | 2189 | 2222 | 2254 | 2287 | 2320 | 2352 |
| 133 | 2385 | 2418 | 2450 | 2483 | 2516 | 2548 | 2581 | 2613 | 2646 | 2678 |
| 134 | 2710 | 2743 | 2775 | 2808 | 2840 | 2872 | 2905 | 2937 | 2969 | 3001 |
| 135 | 1 3033 | 3066 | 3098 | 3130 | 3162 | 3194 | 3226 | 3258 | 3290 | 3322 |
| 136 | 3354 | 3386 | 3418 | 3450 | 3481 | 3513 | 3545 | 3577 | 3609 | 3640 |
| 137 | 3672 | 3704 | 3735 | 3767 | 3799 | 3830 | 3862 | 3893 | 3925 | 3956 |
| 138 | 3988 | 4019 | 4051 | 4082 | 4114 | 4145 | 4176 | 4208 | 4239 | 4270 |
| 139 | 4301 | 4333 | 4364 | 4395 | 4426 | 4457 | 4489 | 4520 | 4551 | 4582 |
| 140 | 1 4613 | 4644 | 4675 | 4706 | 4737 | 4768 | 4799 | 4829 | 4860 | 4891 |
| 141 | 4922 | 4953 | 4983 | 5014 | 5045 | 5076 | 5106 | 5137 | 5168 | 5198 |
| 142 | 5229 | 5259 | 5290 | 5320 | 5351 | 5381 | 5412 | 5442 | 5473 | 5503 |
| 143 | 5534 | 5564 | 5594 | 5625 | 5655 | 5685 | 5715 | 5746 | 5776 | 5806 |
| 144 | 5836 | 5866 | 5897 | 5927 | 5957 | 5987 | 6017 | 6047 | 6077 | 6107 |
| 145 | 1 6137 | 6167 | 6197 | 6227 | 6256 | 6286 | 6316 | 6346 | 6376 | 6406 |
| 146 | 6435 | 6465 | 6495 | 6524 | 6554 | 6584 | 6613 | 6643 | 6673 | 6702 |
| 147 | 6732 | 6761 | 6791 | 6820 | 6850 | 6879 | 6909 | 6938 | 6967 | 6997 |
| 148 | 7026 | 7056 | 7085 | 7114 | 7143 | 7173 | 7202 | 7231 | 7260 | 7289 |
| 149 | 7319 | 7348 | 7377 | 7406 | 7435 | 7464 | 7493 | 7522 | 7551 | 7580 |
| 150 | 1 7609 | 7638 | 7667 | 7696 | 7725 | 7754 | 7782 | 7811 | 7840 | 7869 |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

P. P.

| | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.4 | 4.3 | 4.2 | 4.1 | 4.0 | 3.9 | 3.8 | 3.7 | 3.6 | 3.5 | 3.4 | 3.3 | 3.2 | 3.1 |
| 2 | 8.8 | 8.6 | 8.4 | 8.2 | 8.0 | 7.8 | 7.6 | 7.4 | 7.2 | 7.0 | 6.8 | 6.6 | 6.4 | 6.2 |
| 3 | 13.2 | 12.9 | 12.6 | 12.3 | 12.0 | 11.7 | 11.4 | 11.1 | 10.8 | 10.5 | 10.2 | 9.9 | 9.6 | 9.3 |
| 4 | 17.6 | 17.2 | 16.8 | 16.4 | 16.0 | 15.6 | 15.2 | 14.8 | 14.4 | 14.0 | 13.6 | 13.2 | 12.8 | 12.4 |
| 5 | 22.0 | 21.5 | 21.0 | 20.5 | 20.0 | 19.5 | 19.0 | 18.5 | 18.0 | 17.5 | 17.0 | 16.5 | 16.0 | 15.5 |
| 6 | 26.4 | 25.8 | 25.2 | 24.6 | 24.0 | 23.4 | 22.8 | 22.2 | 21.6 | 21.0 | 20.4 | 19.8 | 19.2 | 18.6 |
| 7 | 30.8 | 30.1 | 29.4 | 28.7 | 28.0 | 27.3 | 26.6 | 25.9 | 25.2 | 24.5 | 23.8 | 23.1 | 22.4 | 21.7 |
| 8 | 35.2 | 34.4 | 33.6 | 32.8 | 32.0 | 31.2 | 30.4 | 29.6 | 28.8 | 28.0 | 27.2 | 26.4 | 25.6 | 24.8 |
| 9 | 39.6 | 38.7 | 37.8 | 36.9 | 36.0 | 35.1 | 34.2 | 33.3 | 32.4 | 31.5 | 30.6 | 29.7 | 28.8 | 27.9 |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 150 | 1 7609 | 7638 | 7667 | 7696 | 7725 | 7754 | 7782 | 7811 | 7840 | 7869 |
| 151 | 7898 | 7926 | 7955 | 7984 | 8013 | 8041 | 8070 | 8099 | 8127 | 8156 |
| 152 | 8184 | 8213 | 8241 | 8270 | 8298 | 8327 | 8355 | 8384 | 8412 | 8441 |
| 153 | 8469 | 8498 | 8526 | 8554 | 8583 | 8611 | 8639 | 8667 | 8696 | 8724 |
| 154 | 8752 | 8780 | 8808 | 8837 | 8865 | 8893 | 8921 | 8949 | 8977 | 9005 |
| 155 | 1 9033 | 9061 | 9089 | 9117 | 9145 | 9173 | 9201 | 9229 | 9257 | 9285 |
| 156 | 9312 | 9340 | 9368 | 9396 | 9424 | 9451 | 9479 | 9507 | 9535 | 9562 |
| 157 | 9590 | 9618 | 9645 | 9673 | 9700 | 9728 | 9756 | 9783 | 9811 | 9838 |
| 158 | 1 9866 | 9893 | 9921 | 9948 | 9976 | 0̄003 | 0̄030 | 0̄058 | 0̄085 | 0̄112 |
| 159 | 2 0140 | 0167 | 0194 | 0222 | 0249 | 0276 | 0303 | 0330 | 0358 | 0385 |
| 160 | 2 0412 | 0439 | 0466 | 0493 | 0520 | 0548 | 0575 | 0602 | 0629 | 0656 |
| 161 | 0683 | 0710 | 0737 | 0763 | 0790 | 0817 | 0844 | 0871 | 0898 | 0925 |
| 162 | 0952 | 0978 | 1005 | 1032 | 1059 | 1085 | 1112 | 1139 | 1165 | 1192 |
| 163 | 1219 | 1245 | 1272 | 1299 | 1325 | 1352 | 1378 | 1405 | 1431 | 1458 |
| 164 | 1484 | 1511 | 1537 | 1564 | 1590 | 1617 | 1643 | 1669 | 1696 | 1722 |
| 165 | 2 1748 | 1775 | 1801 | 1827 | 1854 | 1880 | 1906 | 1932 | 1958 | 1985 |
| 166 | 2011 | 2037 | 2063 | 2089 | 2115 | 2141 | 2167 | 2194 | 2220 | 2246 |
| 167 | 2272 | 2298 | 2324 | 2350 | 2376 | 2401 | 2427 | 2453 | 2479 | 2505 |
| 168 | 2531 | 2557 | 2583 | 2608 | 2634 | 2660 | 2686 | 2712 | 2737 | 2763 |
| 169 | 2789 | 2814 | 2840 | 2866 | 2891 | 2917 | 2943 | 2968 | 2994 | 3019 |
| 170 | 2 3045 | 3070 | 3096 | 3121 | 3147 | 3172 | 3198 | 3223 | 3249 | 3274 |
| 171 | 3300 | 3325 | 3350 | 3376 | 3401 | 3426 | 3452 | 3477 | 3502 | 3528 |
| 172 | 3553 | 3578 | 3603 | 3629 | 3654 | 3679 | 3704 | 3729 | 3754 | 3779 |
| 173 | 3805 | 3830 | 3855 | 3880 | 3905 | 3930 | 3955 | 3980 | 4005 | 4030 |
| 174 | 4055 | 4080 | 4105 | 4130 | 4155 | 4180 | 4204 | 4229 | 4254 | 4279 |
| 175 | 2 4304 | 4329 | 4353 | 4378 | 4403 | 4428 | 4452 | 4477 | 4502 | 4527 |
| 176 | 4551 | 4576 | 4601 | 4625 | 4650 | 4674 | 4699 | 4724 | 4748 | 4773 |
| 177 | 4797 | 4822 | 4846 | 4871 | 4895 | 4920 | 4944 | 4969 | 4993 | 5018 |
| 178 | 5042 | 5066 | 5091 | 5115 | 5139 | 5164 | 5188 | 5212 | 5237 | 5261 |
| 179 | 5285 | 5310 | 5334 | 5358 | 5382 | 5406 | 5431 | 5455 | 5479 | 5503 |
| 180 | 2 5527 | 5551 | 5575 | 5600 | 5624 | 5648 | 5672 | 5696 | 5720 | 5744 |
| 181 | 5768 | 5792 | 5816 | 5840 | 5864 | 5888 | 5912 | 5935 | 5959 | 5983 |
| 182 | 6007 | 6031 | 6055 | 6079 | 6102 | 6126 | 6150 | 6174 | 6198 | 6221 |
| 183 | 6245 | 6269 | 6293 | 6316 | 6340 | 6364 | 6387 | 6411 | 6435 | 6458 |
| 184 | 6482 | 6505 | 6529 | 6553 | 6576 | 6600 | 6623 | 6647 | 6670 | 6694 |
| 185 | 2 6717 | 6741 | 6764 | 6788 | 6811 | 6834 | 6858 | 6881 | 6905 | 6928 |
| 186 | 6951 | 6975 | 6998 | 7021 | 7045 | 7068 | 7091 | 7114 | 7138 | 7161 |
| 187 | 7184 | 7207 | 7231 | 7254 | 7277 | 7300 | 7323 | 7346 | 7370 | 7393 |
| 188 | 7416 | 7439 | 7462 | 7485 | 7508 | 7531 | 7554 | 7577 | 7600 | 7623 |
| 189 | 7646 | 7669 | 7692 | 7715 | 7738 | 7761 | 7784 | 7807 | 7830 | 7852 |
| 190 | 2 7875 | 7898 | 7921 | 7944 | 7967 | 7989 | 8012 | 8035 | 8058 | 8081 |
| 191 | 8103 | 8126 | 8149 | 8171 | 8194 | 8217 | 8240 | 8262 | 8285 | 8307 |
| 192 | 8330 | 8353 | 8375 | 8398 | 8421 | 8443 | 8466 | 8488 | 8511 | 8533 |
| 193 | 8556 | 8578 | 8601 | 8623 | 8646 | 8668 | 8691 | 8713 | 8735 | 8758 |
| 194 | 8780 | 8803 | 8825 | 8847 | 8870 | 8892 | 8914 | 8937 | 8959 | 8981 |
| 195 | 2 9003 | 9026 | 9048 | 9070 | 9092 | 9115 | 9137 | 9159 | 9181 | 9203 |
| 196 | 9226 | 9248 | 9270 | 9292 | 9314 | 9336 | 9358 | 9380 | 9403 | 9425 |
| 197 | 9447 | 9469 | 9491 | 9513 | 9535 | 9557 | 9579 | 9601 | 9623 | 9645 |
| 198 | 9667 | 9688 | 9710 | 9732 | 9754 | 9776 | 9798 | 9820 | 9842 | 9863 |
| 199 | 2 9885 | 9907 | 9929 | 9951 | 9973 | 9994 | 0̄016 | 0̄038 | 0̄060 | 0̄081 |
| 200 | 3 0103 | 0125 | 0146 | 0168 | 0190 | 0211 | 0233 | 0255 | 0276 | 0298 |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

P. P.

| | 80 | 29 |
|---|---|---|
| 1 | 3.0 | 2.9 |
| 2 | 6.0 | 5.8 |
| 3 | 9.0 | 8.7 |
| 4 | 12.0 | 11.6 |
| 5 | 15.0 | 14.5 |
| 6 | 18.0 | 17.4 |
| 7 | 21.0 | 20.3 |
| 8 | 24.0 | 23.2 |
| 9 | 27.0 | 26.1 |

| | 28 | 27 |
|---|---|---|
| 1 | 2.8 | 2.7 |
| 2 | 5.6 | 5.4 |
| 3 | 8.4 | 8.1 |
| 4 | 11.2 | 10.8 |
| 5 | 14.0 | 13.5 |
| 6 | 16.8 | 16.2 |
| 7 | 19.6 | 18.9 |
| 8 | 22.4 | 21.6 |
| 9 | 25.2 | 24.3 |

| | 26 | 25 |
|---|---|---|
| 1 | 2.6 | 2.5 |
| 2 | 5.2 | 5.0 |
| 3 | 7.8 | 7.5 |
| 4 | 10.4 | 10.0 |
| 5 | 13.0 | 12.5 |
| 6 | 15.6 | 15.0 |
| 7 | 18.2 | 17.5 |
| 8 | 20.8 | 20.0 |
| 9 | 23.4 | 22.5 |

| | 24 | 28 |
|---|---|---|
| 1 | 2.4 | 2.3 |
| 2 | 4.8 | 4.6 |
| 3 | 7.2 | 6.9 |
| 4 | 9.6 | 9.2 |
| 5 | 12.0 | 11.5 |
| 6 | 14.4 | 13.8 |
| 7 | 16.8 | 16.1 |
| 8 | 19.2 | 18.4 |
| 9 | 21.6 | 20.7 |

| | 22 | 21 |
|---|---|---|
| 1 | 2.2 | 2.1 |
| 2 | 4.4 | 4.2 |
| 3 | 6.6 | 6.3 |
| 4 | 8.8 | 8.4 |
| 5 | 11.0 | 10.5 |
| 6 | 13.2 | 12.6 |
| 7 | 15.4 | 14.7 |
| 8 | 17.6 | 16.8 |
| 9 | 19.8 | 18.9 |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 200 | 3 0103 | 0125 | 0146 | 0168 | 0190 | 0211 | 0233 | 0255 | 0276 | 0298 | |
| 201 | 0320 | 0341 | 0363 | 0384 | 0406 | 0428 | 0449 | 0471 | 0492 | 0514 | 22 |
| 202 | 0535 | 0557 | 0578 | 0600 | 0621 | 0643 | 0664 | 0685 | 0707 | 0728 | 1 2.2 |
| 203 | 0750 | 0771 | 0792 | 0814 | 0835 | 0856 | 0878 | 0899 | 0920 | 0942 | 2 4.4 |
| 204 | 0963 | 0984 | 1006 | 1027 | 1048 | 1069 | 1091 | 1112 | 1133 | 1154 | 3 6.6 |
| 205 | 3 1175 | 1197 | 1218 | 1239 | 1260 | 1281 | 1302 | 1323 | 1345 | 1366 | 4 8.8 |
| 206 | 1387 | 1408 | 1429 | 1450 | 1471 | 1492 | 1513 | 1534 | 1555 | 1576 | 5 11.0; 6 13.2 |
| 207 | 1597 | 1618 | 1639 | 1660 | 1681 | 1702 | 1723 | 1744 | 1765 | 1785 | 7 15.4 |
| 208 | 1806 | 1827 | 1848 | 1869 | 1890 | 1911 | 1931 | 1952 | 1973 | 1994 | 8 17.6 |
| 209 | 2015 | 2035 | 2056 | 2077 | 2098 | 2118 | 2139 | 2160 | 2181 | 2201 | 9 19.8 |
| 210 | 3 2222 | 2243 | 2263 | 2284 | 2305 | 2325 | 2346 | 2366 | 2387 | 2408 | |
| 211 | 2428 | 2449 | 2469 | 2490 | 2510 | 2531 | 2552 | 2572 | 2593 | 2613 | 21 |
| 212 | 2634 | 2654 | 2675 | 2695 | 2715 | 2736 | 2756 | 2777 | 2797 | 2818 | 1 2.1 |
| 213 | 2838 | 2858 | 2879 | 2899 | 2919 | 2940 | 2960 | 2980 | 3001 | 3021 | 2 4.2 |
| 214 | 3041 | 3062 | 3082 | 3102 | 3122 | 3143 | 3163 | 3183 | 3203 | 3224 | 3 6.3 |
| 215 | 3 3244 | 3264 | 3284 | 3304 | 3325 | 3345 | 3365 | 3385 | 3405 | 3425 | 4 8.4 |
| 216 | 3445 | 3465 | 3486 | 3506 | 3526 | 3546 | 3566 | 3586 | 3606 | 3626 | 5 10.5; 6 12.6 |
| 217 | 3646 | 3666 | 3686 | 3706 | 3726 | 3746 | 3766 | 3786 | 3806 | 3826 | 7 14.7 |
| 218 | 3846 | 3866 | 3885 | 3905 | 3925 | 3945 | 3965 | 3985 | 4005 | 4025 | 8 16.8 |
| 219 | 4044 | 4064 | 4084 | 4104 | 4124 | 4143 | 4163 | 4183 | 4203 | 4223 | 9 18.9 |
| 220 | 3 4242 | 4262 | 4282 | 4301 | 4321 | 4341 | 4361 | 4380 | 4400 | 4420 | |
| 221 | 4439 | 4459 | 4479 | 4498 | 4518 | 4537 | 4557 | 4577 | 4596 | 4616 | 20 |
| 222 | 4635 | 4655 | 4674 | 4694 | 4713 | 4733 | 4753 | 4772 | 4792 | 4811 | 1 2.0 |
| 223 | 4830 | 4850 | 4869 | 4889 | 4908 | 4928 | 4947 | 4967 | 4986 | 5005 | 2 4.0 |
| 224 | 5025 | 5044 | 5064 | 5083 | 5102 | 5122 | 5141 | 5160 | 5180 | 5199 | 3 6.0 |
| 225 | 3 5218 | 5238 | 5257 | 5276 | 5295 | 5315 | 5334 | 5353 | 5372 | 5392 | 4 8.0 |
| 226 | 5411 | 5430 | 5449 | 5468 | 5488 | 5507 | 5526 | 5545 | 5564 | 5583 | 5 10.0; 6 12.0 |
| 227 | 5603 | 5622 | 5641 | 5660 | 5679 | 5698 | 5717 | 5736 | 5755 | 5774 | 7 14.0 |
| 228 | 5793 | 5813 | 5832 | 5851 | 5870 | 5889 | 5908 | 5927 | 5946 | 5965 | 8 16.0 |
| 229 | 5984 | 6003 | 6021 | 6040 | 6059 | 6078 | 6097 | 6116 | 6135 | 6154 | 9 18.0 |
| 230 | 3 6173 | 6192 | 6211 | 6229 | 6248 | 6267 | 6286 | 6305 | 6324 | 6342 | |
| 231 | 6361 | 6380 | 6399 | 6418 | 6436 | 6455 | 6474 | 6493 | 6511 | 6530 | 19 |
| 232 | 6549 | 6568 | 6586 | 6605 | 6624 | 6642 | 6661 | 6680 | 6698 | 6717 | 1 1.9 |
| 233 | 6736 | 6754 | 6773 | 6791 | 6810 | 6829 | 6847 | 6866 | 6884 | 6903 | 2 3.8 |
| 234 | 6922 | 6940 | 6959 | 6977 | 6996 | 7014 | 7033 | 7051 | 7070 | 7088 | 3 5.7 |
| 235 | 3 7107 | 7125 | 7144 | 7162 | 7181 | 7199 | 7218 | 7236 | 7254 | 7273 | 4 7.6 |
| 236 | 7291 | 7310 | 7328 | 7346 | 7365 | 7383 | 7401 | 7420 | 7438 | 7457 | 5 9.5; 6 11.4 |
| 237 | 7475 | 7493 | 7511 | 7530 | 7548 | 7566 | 7585 | 7603 | 7621 | 7639 | 7 13.3 |
| 238 | 7658 | 7676 | 7694 | 7712 | 7731 | 7749 | 7767 | 7785 | 7803 | 7822 | 8 15.2 |
| 239 | 7840 | 7858 | 7876 | 7894 | 7912 | 7931 | 7949 | 7967 | 7985 | 8003 | 9 17.1 |
| 240 | 3 8021 | 8039 | 8057 | 8075 | 8093 | 8112 | 8130 | 8148 | 8166 | 8184 | |
| 241 | 8202 | 8220 | 8238 | 8256 | 8274 | 8292 | 8310 | 8328 | 8346 | 8364 | 18 |
| 242 | 8382 | 8399 | 8417 | 8435 | 8453 | 8471 | 8489 | 8507 | 8525 | 8543 | 1 1.8 |
| 243 | 8561 | 8578 | 8596 | 8614 | 8632 | 8650 | 8668 | 8686 | 8703 | 8721 | 2 3.6 |
| 244 | 8739 | 8757 | 8775 | 8792 | 8810 | 8828 | 8846 | 8863 | 8881 | 8899 | 3 5.4 |
| 245 | 3 8917 | 8934 | 8952 | 8970 | 8987 | 9005 | 9023 | 9041 | 9058 | 9076 | 4 7.2 |
| 246 | 9094 | 9111 | 9129 | 9146 | 9164 | 9182 | 9199 | 9217 | 9235 | 9252 | 5 9.0; 6 10.8 |
| 247 | 9270 | 9287 | 9305 | 9322 | 9340 | 9358 | 9375 | 9393 | 9410 | 9428 | 7 12.6 |
| 248 | 9445 | 9463 | 9480 | 9498 | 9515 | 9533 | 9550 | 9568 | 9585 | 9602 | 8 14.4 |
| 249 | 9620 | 9637 | 9655 | 9672 | 9690 | 9707 | 9724 | 9742 | 9759 | 9777 | 9 16.2 |
| 250 | 3 9794 | 9811 | 9829 | 9846 | 9863 | 9881 | 9898 | 9915 | 9933 | 9950 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P. P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 250 | 3 9794 | 9811 | 9829 | 9846 | 9863 | 9881 | 9898 | 9915 | 9933 | 9950 | |
| 251 | 3 9967 | 9985 | 0̄002 | 0̄019 | 0̄037 | 0̄054 | 0̄071 | 0̄088 | 0̄106 | 0̄123 | 18 |
| 252 | 4 0140 | 0157 | 0175 | 0192 | 0209 | 0226 | 0243 | 0261 | 0278 | 0295 | 1 1.8 |
| 253 | 0312 | 0329 | 0346 | 0364 | 0381 | 0398 | 0415 | 0432 | 0449 | 0466 | 2 3.6 |
| 254 | 0483 | 0500 | 0518 | 0535 | 0552 | 0569 | 0586 | 0603 | 0620 | 0637 | 3 5.4 |
| 255 | 4 0654 | 0671 | 0688 | 0705 | 0722 | 0739 | 0756 | 0773 | 0790 | 0807 | 4 7.2 |
| 256 | 0824 | 0841 | 0858 | 0875 | 0892 | 0909 | 0926 | 0943 | 0960 | 0976 | 5 9.0<br>6 10.8 |
| 257 | 0993 | 1010 | 1027 | 1044 | 1061 | 1078 | 1095 | 1111 | 1128 | 1145 | 7 12.6 |
| 258 | 1162 | 1179 | 1196 | 1212 | 1229 | 1246 | 1263 | 1280 | 1296 | 1313 | 8 14.4 |
| 259 | 1330 | 1347 | 1363 | 1380 | 1397 | 1414 | 1430 | 1447 | 1464 | 1481 | 9 16.2 |
| 260 | 4 1497 | 1514 | 1531 | 1547 | 1564 | 1581 | 1597 | 1614 | 1631 | 1647 | |
| 261 | 1664 | 1681 | 1697 | 1714 | 1731 | 1747 | 1764 | 1780 | 1797 | 1814 | 17 |
| 262 | 1830 | 1847 | 1863 | 1880 | 1896 | 1913 | 1929 | 1946 | 1963 | 1979 | 1 1.7 |
| 263 | 1996 | 2012 | 2029 | 2045 | 2062 | 2078 | 2095 | 2111 | 2127 | 2144 | 2 3.4 |
| 264 | 2160 | 2177 | 2193 | 2210 | 2226 | 2243 | 2259 | 2275 | 2292 | 2308 | 3 5.1 |
| 265 | 4 2325 | 2341 | 2357 | 2374 | 2390 | 2406 | 2423 | 2439 | 2455 | 2472 | 4 6.8 |
| 266 | 2488 | 2504 | 2521 | 2537 | 2553 | 2570 | 2586 | 2602 | 2619 | 2635 | 5 8.5<br>6 10.2 |
| 267 | 2651 | 2667 | 2684 | 2700 | 2716 | 2732 | 2749 | 2765 | 2781 | 2797 | 7 11.9 |
| 268 | 2813 | 2830 | 2846 | 2862 | 2878 | 2894 | 2911 | 2927 | 2943 | 2959 | 8 13.6 |
| 269 | 2975 | 2991 | 3008 | 3024 | 3040 | 3056 | 3072 | 3088 | 3104 | 3120 | 9 15.3 |
| 270 | 4 3136 | 3152 | 3169 | 3185 | 3201 | 3217 | 3233 | 3249 | 3265 | 3281 | |
| 271 | 3297 | 3313 | 3329 | 3345 | 3361 | 3377 | 3393 | 3409 | 3425 | 3441 | 16 |
| 272 | 3457 | 3473 | 3489 | 3505 | 3521 | 3537 | 3553 | 3569 | 3584 | 3600 | 1 1.6 |
| 273 | 3616 | 3632 | 3648 | 3664 | 3680 | 3696 | 3712 | 3727 | 3743 | 3759 | 2 3.2 |
| 274 | 3775 | 3791 | 3807 | 3823 | 3838 | 3854 | 3870 | 3886 | 3902 | 3917 | 3 4.8 |
| 275 | 4 3933 | 3949 | 3965 | 3981 | 3996 | 4012 | 4028 | 4044 | 4059 | 4075 | 4 6.4 |
| 276 | 4091 | 4107 | 4122 | 4138 | 4154 | 4170 | 4185 | 4201 | 4217 | 4232 | 5 8.0<br>6 9.6 |
| 277 | 4248 | 4264 | 4279 | 4295 | 4311 | 4326 | 4342 | 4358 | 4373 | 4389 | 7 11.2 |
| 278 | 4404 | 4420 | 4436 | 4451 | 4467 | 4483 | 4498 | 4514 | 4529 | 4545 | 8 12.8 |
| 279 | 4560 | 4576 | 4592 | 4607 | 4623 | 4638 | 4654 | 4669 | 4685 | 4700 | 9 14.4 |
| 280 | 4 4716 | 4731 | 4747 | 4762 | 4778 | 4793 | 4809 | 4824 | 4840 | 4855 | |
| 281 | 4871 | 4886 | 4902 | 4917 | 4932 | 4948 | 4963 | 4979 | 4994 | 5010 | 15 |
| 282 | 5025 | 5040 | 5056 | 5071 | 5086 | 5102 | 5117 | 5133 | 5148 | 5163 | 1 1.5 |
| 283 | 5179 | 5194 | 5209 | 5225 | 5240 | 5255 | 5271 | 5286 | 5301 | 5317 | 2 3.0 |
| 284 | 5332 | 5347 | 5362 | 5378 | 5393 | 5408 | 5423 | 5439 | 5454 | 5469 | 3 4.5 |
| 285 | 4 5484 | 5500 | 5515 | 5530 | 5545 | 5561 | 5576 | 5591 | 5606 | 5621 | 4 6.0 |
| 286 | 5637 | 5652 | 5667 | 5682 | 5697 | 5712 | 5728 | 5743 | 5758 | 5773 | 5 7.5<br>6 9.0 |
| 287 | 5788 | 5803 | 5818 | 5834 | 5849 | 5864 | 5879 | 5894 | 5909 | 5924 | 7 10.5 |
| 288 | 5939 | 5954 | 5969 | 5984 | 6000 | 6015 | 6030 | 6045 | 6060 | 6075 | 8 12.0 |
| 289 | 6090 | 6105 | 6120 | 6135 | 6150 | 6165 | 6180 | 6195 | 6210 | 6225 | 9 13.5 |
| 290 | 4 6240 | 6255 | 6270 | 6285 | 6300 | 6315 | 6330 | 6345 | 6359 | 6374 | |
| 291 | 6389 | 6404 | 6419 | 6434 | 6449 | 6464 | 6479 | 6494 | 6509 | 6523 | 14 |
| 292 | 6538 | 6553 | 6568 | 6583 | 6598 | 6613 | 6627 | 6642 | 6657 | 6672 | 1 1.4 |
| 293 | 6687 | 6702 | 6716 | 6731 | 6746 | 6761 | 6776 | 6790 | 6805 | 6820 | 2 2.8 |
| 294 | 6835 | 6850 | 6864 | 6879 | 6894 | 6909 | 6923 | 6938 | 6953 | 6967 | 3 4.2 |
| 295 | 4 6982 | 6997 | 7012 | 7026 | 7041 | 7056 | 7070 | 7085 | 7100 | 7114 | 4 5.6 |
| 296 | 7129 | 7144 | 7159 | 7173 | 7188 | 7202 | 7217 | 7232 | 7246 | 7261 | 5 7.0<br>6 8.4 |
| 297 | 7276 | 7290 | 7305 | 7319 | 7334 | 7349 | 7363 | 7378 | 7392 | 7407 | 7 9.8 |
| 298 | 7422 | 7436 | 7451 | 7465 | 7480 | 7494 | 7509 | 7524 | 7538 | 7553 | 8 11.2 |
| 299 | 7567 | 7582 | 7596 | 7611 | 7625 | 7640 | 7654 | 7669 | 7683 | 7698 | 9 12.6 |
| 300 | 4 7712 | 7727 | 7741 | 7756 | 7770 | 7784 | 7799 | 7813 | 7828 | 7842 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | PP. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 300 | 4 7712 | 7727 | 7741 | 7756 | 7770 | 7784 | 7799 | 7813 | 7828 | 7842 | |
| 301 | 7857 | 7871 | 7885 | 7900 | 7914 | 7929 | 7943 | 7958 | 7972 | 7986 | |
| 302 | 8001 | 8015 | 8029 | 8044 | 8058 | 8073 | 8087 | 8101 | 8116 | 8130 | |
| 303 | 8144 | 8159 | 8173 | 8187 | 8202 | 8216 | 8230 | 8244 | 8259 | 8273 | |
| 304 | 8287 | 8302 | 8316 | 8330 | 8344 | 8359 | 8373 | 8387 | 8401 | 8416 | 15 |
| 305 | 4 8430 | 8444 | 8458 | 8473 | 8487 | 8501 | 8515 | 8530 | 8544 | 8558 | 1 1.5 |
| 306 | 8572 | 8586 | 8601 | 8615 | 8629 | 8643 | 8657 | 8671 | 8686 | 8700 | 2 3.0 |
| 307 | 8714 | 8728 | 8742 | 8756 | 8770 | 8785 | 8799 | 8813 | 8827 | 8841 | 3 4.5 |
| 308 | 8855 | 8869 | 8883 | 8897 | 8911 | 8926 | 8940 | 8954 | 8968 | 8982 | 4 6.0 |
| 309 | 8996 | 9010 | 9024 | 9038 | 9052 | 9066 | 9080 | 9094 | 9108 | 9122 | 5 7.5<br>6 9.0 |
| 310 | 4 9136 | 9150 | 9164 | 9178 | 9192 | 9206 | 9220 | 9234 | 9248 | 9262 | 7 10.5<br>8 12.0 |
| 311 | 9276 | 9290 | 9304 | 9318 | 9332 | 9346 | 9360 | 9374 | 9388 | 9402 | 9 13.5 |
| 312 | 9415 | 9429 | 9443 | 9457 | 9471 | 9485 | 9499 | 9513 | 9527 | 9541 | |
| 313 | 9554 | 9568 | 9582 | 9596 | 9610 | 9624 | 9638 | 9651 | 9665 | 9679 | |
| 314 | 9693 | 9707 | 9721 | 9734 | 9748 | 9762 | 9776 | 9790 | 9803 | 9817 | |
| 315 | 4 9831 | 9845 | 9859 | 9872 | 9886 | 9900 | 9914 | 9927 | 9941 | 9955 | 14 |
| 316 | 4 9969 | 9982 | 9996 | 0̄010 | 0̄024 | 0̄037 | 0̄051 | 0̄065 | 0̄079 | 0̄092 | 1 1.4 |
| 317 | 5 0106 | 0120 | 0133 | 0147 | 0161 | 0174 | 0188 | 0202 | 0215 | 0229 | 2 2.8 |
| 318 | 0243 | 0256 | 0270 | 0284 | 0297 | 0311 | 0325 | 0338 | 0352 | 0365 | 3 4.2 |
| 319 | 0379 | 0393 | 0406 | 0420 | 0433 | 0447 | 0461 | 0474 | 0488 | 0501 | 4 5.6 |
| 320 | 5 0515 | 0529 | 0542 | 0556 | 0569 | 0583 | 0596 | 0610 | 0623 | 0637 | 5 7.0<br>6 8.4 |
| 321 | 0651 | 0664 | 0678 | 0691 | 0705 | 0718 | 0732 | 0745 | 0759 | 0772 | 7 9.8 |
| 322 | 0786 | 0799 | 0813 | 0826 | 0840 | 0853 | 0866 | 0880 | 0893 | 0907 | 8 11.2 |
| 323 | 0920 | 0934 | 0947 | 0961 | 0974 | 0987 | 1001 | 1014 | 1028 | 1041 | 9 12.6 |
| 324 | 1055 | 1068 | 1081 | 1095 | 1108 | 1121 | 1135 | 1148 | 1162 | 1175 | |
| 325 | 5 1188 | 1202 | 1215 | 1228 | 1242 | 1255 | 1268 | 1282 | 1295 | 1308 | |
| 326 | 1322 | 1335 | 1348 | 1362 | 1375 | 1388 | 1402 | 1415 | 1428 | 1441 | |
| 327 | 1455 | 1468 | 1481 | 1495 | 1508 | 1521 | 1534 | 1548 | 1561 | 1574 | 18 |
| 328 | 1587 | 1601 | 1614 | 1627 | 1640 | 1654 | 1667 | 1680 | 1693 | 1706 | 1 1.3 |
| 329 | 1720 | 1733 | 1746 | 1759 | 1772 | 1786 | 1799 | 1812 | 1825 | 1838 | 2 2.6 |
| 330 | 5 1851 | 1865 | 1878 | 1891 | 1904 | 1917 | 1930 | 1943 | 1957 | 1970 | 3 3.9<br>4 5.2 |
| 331 | 1983 | 1996 | 2009 | 2022 | 2035 | 2048 | 2061 | 2075 | 2088 | 2101 | 5 6.5 |
| 332 | 2114 | 2127 | 2140 | 2153 | 2166 | 2179 | 2192 | 2205 | 2218 | 2231 | 6 7.8 |
| 333 | 2244 | 2257 | 2270 | 2284 | 2297 | 2310 | 2323 | 2336 | 2349 | 2362 | 7 9.1<br>8 10.4 |
| 334 | 2375 | 2388 | 2401 | 2414 | 2427 | 2440 | 2453 | 2466 | 2479 | 2492 | 9 11.7 |
| 335 | 5 2504 | 2517 | 2530 | 2543 | 2556 | 2569 | 2582 | 2595 | 2608 | 2621 | |
| 336 | 2634 | 2647 | 2660 | 2673 | 2686 | 2699 | 2711 | 2724 | 2737 | 2750 | |
| 337 | 2763 | 2776 | 2789 | 2802 | 2815 | 2827 | 2840 | 2853 | 2866 | 2879 | |
| 338 | 2892 | 2905 | 2917 | 2930 | 2943 | 2956 | 2969 | 2982 | 2994 | 3007 | |
| 339 | 3020 | 3033 | 3046 | 3058 | 3071 | 3084 | 3097 | 3110 | 3122 | 3135 | 12 |
| 340 | 5 3148 | 3161 | 3173 | 3186 | 3199 | 3212 | 3224 | 3237 | 3250 | 3263 | 1 1.2<br>2 2.4 |
| 341 | 3275 | 3288 | 3301 | 3314 | 3326 | 3339 | 3352 | 3364 | 3377 | 3390 | 3 3.6 |
| 342 | 3403 | 3415 | 3428 | 3441 | 3453 | 3466 | 3479 | 3491 | 3504 | 3517 | 4 4.8 |
| 343 | 3529 | 3542 | 3555 | 3567 | 3580 | 3593 | 3605 | 3618 | 3631 | 3643 | 5 6.0<br>6 7.2 |
| 344 | 3656 | 3668 | 3681 | 3694 | 3706 | 3719 | 3732 | 3744 | 3757 | 3769 | 7 8.4 |
| 345 | 5 3782 | 3794 | 3807 | 3820 | 3832 | 3845 | 3857 | 3870 | 3882 | 3895 | 8 9.6 |
| 346 | 3908 | 3920 | 3933 | 3945 | 3958 | 3970 | 3983 | 3995 | 4008 | 4020 | 9 10.8 |
| 347 | 4033 | 4045 | 4058 | 4070 | 4083 | 4095 | 4108 | 4120 | 4133 | 4145 | |
| 348 | 4158 | 4170 | 4183 | 4195 | 4208 | 4220 | 4233 | 4245 | 4258 | 4270 | |
| 349 | 4283 | 4295 | 4307 | 4320 | 4332 | 4345 | 4357 | 4370 | 4382 | 4394 | |
| 350 | 5 4407 | 4419 | 4432 | 4444 | 4456 | 4469 | 4481 | 4494 | 4506 | 4518 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | PP. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 350 | 5 4407 | 4419 | 4432 | 4444 | 4456 | 4469 | 4481 | 4494 | 4506 | 4518 |
| 351 | 4531 | 4543 | 4555 | 4568 | 4580 | 4593 | 4605 | 4617 | 4630 | 4642 |
| 352 | 4654 | 4667 | 4679 | 4691 | 4704 | 4716 | 4728 | 4741 | 4753 | 4765 |
| 353 | 4777 | 4790 | 4802 | 4814 | 4827 | 4839 | 4851 | 4864 | 4876 | 4888 |
| 354 | 4900 | 4913 | 4925 | 4937 | 4949 | 4962 | 4974 | 4986 | 4998 | 5011 |
| 355 | 5 5023 | 5035 | 5047 | 5060 | 5072 | 5084 | 5096 | 5108 | 5121 | 5133 |
| 356 | 5145 | 5157 | 5169 | 5182 | 5194 | 5206 | 5218 | 5230 | 5242 | 5255 |
| 357 | 5267 | 5279 | 5291 | 5303 | 5315 | 5328 | 5340 | 5352 | 5364 | 5376 |
| 358 | 5388 | 5400 | 5413 | 5425 | 5437 | 5449 | 5461 | 5473 | 5485 | 5497 |
| 359 | 5509 | 5522 | 5534 | 5546 | 5558 | 5570 | 5582 | 5594 | 5606 | 5618 |
| 360 | 5 5630 | 5642 | 5654 | 5666 | 5678 | 5691 | 5703 | 5715 | 5727 | 5739 |
| 361 | 5751 | 5763 | 5775 | 5787 | 5799 | 5811 | 5823 | 5835 | 5847 | 5859 |
| 362 | 5871 | 5883 | 5895 | 5907 | 5919 | 5931 | 5943 | 5955 | 5967 | 5979 |
| 363 | 5991 | 6003 | 6015 | 6027 | 6038 | 6050 | 6062 | 6074 | 6086 | 6098 |
| 364 | 6110 | 6122 | 6134 | 6146 | 6158 | 6170 | 6182 | 6194 | 6205 | 6217 |
| 365 | 5 6229 | 6241 | 6253 | 6265 | 6277 | 6289 | 6301 | 6312 | 6324 | 6336 |
| 366 | 6348 | 6360 | 6372 | 6384 | 6396 | 6407 | 6419 | 6431 | 6443 | 6455 |
| 367 | 6467 | 6478 | 6490 | 6502 | 6514 | 6526 | 6538 | 6549 | 6561 | 6573 |
| 368 | 6585 | 6597 | 6608 | 6620 | 6632 | 6644 | 6656 | 6667 | 6679 | 6691 |
| 369 | 6703 | 6714 | 6726 | 6738 | 6750 | 6761 | 6773 | 6785 | 6797 | 6808 |
| 370 | 5 6820 | 6832 | 6844 | 6855 | 6867 | 6879 | 6891 | 6902 | 6914 | 6926 |
| 371 | 6937 | 6949 | 6961 | 6972 | 6984 | 6996 | 7008 | 7019 | 7031 | 7043 |
| 372 | 7054 | 7066 | 7078 | 7089 | 7101 | 7113 | 7124 | 7136 | 7148 | 7159 |
| 373 | 7171 | 7183 | 7194 | 7206 | 7217 | 7229 | 7241 | 7252 | 7264 | 7276 |
| 374 | 7287 | 7299 | 7310 | 7322 | 7334 | 7345 | 7357 | 7368 | 7380 | 7392 |
| 375 | 5 7403 | 7415 | 7426 | 7438 | 7449 | 7461 | 7473 | 7484 | 7496 | 7507 |
| 376 | 7519 | 7530 | 7542 | 7553 | 7565 | 7576 | 7588 | 7600 | 7611 | 7623 |
| 377 | 7634 | 7646 | 7657 | 7669 | 7680 | 7692 | 7703 | 7715 | 7726 | 7738 |
| 378 | 7749 | 7761 | 7772 | 7784 | 7795 | 7807 | 7818 | 7830 | 7841 | 7852 |
| 379 | 7864 | 7875 | 7887 | 7898 | 7910 | 7921 | 7933 | 7944 | 7955 | 7967 |
| 380 | 5 7978 | 7990 | 8001 | 8013 | 8024 | 8035 | 8047 | 8058 | 8070 | 8081 |
| 381 | 8092 | 8104 | 8115 | 8127 | 8138 | 8149 | 8161 | 8172 | 8184 | 8195 |
| 382 | 8206 | 8218 | 8229 | 8240 | 8252 | 8263 | 8274 | 8286 | 8297 | 8309 |
| 383 | 8320 | 8331 | 8343 | 8354 | 8365 | 8377 | 8388 | 8399 | 8410 | 8422 |
| 384 | 8433 | 8444 | 8456 | 8467 | 8478 | 8490 | 8501 | 8512 | 8524 | 8535 |
| 385 | 5 8546 | 8557 | 8569 | 8580 | 8591 | 8602 | 8614 | 8625 | 8636 | 8647 |
| 386 | 8659 | 8670 | 8681 | 8692 | 8704 | 8715 | 8726 | 8737 | 8749 | 8760 |
| 387 | 8771 | 8782 | 8794 | 8805 | 8816 | 8827 | 8838 | 8850 | 8861 | 8872 |
| 388 | 8883 | 8894 | 8906 | 8917 | 8928 | 8939 | 8950 | 8961 | 8973 | 8984 |
| 389 | 8995 | 9006 | 9017 | 9028 | 9040 | 9051 | 9062 | 9073 | 9084 | 9095 |
| 390 | 5 9106 | 9118 | 9129 | 9140 | 9151 | 9162 | 9173 | 9184 | 9195 | 9207 |
| 391 | 9218 | 9229 | 9240 | 9251 | 9262 | 9273 | 9284 | 9295 | 9306 | 9318 |
| 392 | 9329 | 9340 | 9351 | 9362 | 9373 | 9384 | 9395 | 9406 | 9417 | 9428 |
| 393 | 9439 | 9450 | 9461 | 9472 | 9483 | 9494 | 9506 | 9517 | 9528 | 9539 |
| 394 | 9550 | 9561 | 9572 | 9583 | 9594 | 9605 | 9616 | 9627 | 9638 | 9649 |
| 395 | 5 9660 | 9671 | 9682 | 9693 | 9704 | 9715 | 9726 | 9737 | 9748 | 9759 |
| 396 | 9770 | 9780 | 9791 | 9802 | 9813 | 9824 | 9835 | 9846 | 9857 | 9868 |
| 397 | 9879 | 9890 | 9901 | 9912 | 9923 | 9934 | 9945 | 9956 | 9966 | 9977 |
| 398 | 5 9988 | 9999 | 0̄010 | 0̄021 | 0̄032 | 0̄043 | 0̄054 | 0̄065 | 0̄076 | 0̄086 |
| 399 | 6 0097 | 0108 | 0119 | 0130 | 0141 | 0152 | 0163 | 0173 | 0184 | 0195 |
| 400 | 6 0206 | 0217 | 0228 | 0239 | 0249 | 0260 | 0271 | 0282 | 0293 | 0304 |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

P.P.

| | 18 |
|---|---|
| 1 | 1.3 |
| 2 | 2.6 |
| 3 | 3.9 |
| 4 | 5.2 |
| 5 | 6.5 |
| 6 | 7.8 |
| 7 | 9.1 |
| 8 | 10.4 |
| 9 | 11.7 |

| | 12 |
|---|---|
| 1 | 1.2 |
| 2 | 2.4 |
| 3 | 3.6 |
| 4 | 4.8 |
| 5 | 6.0 |
| 6 | 7.2 |
| 7 | 8.4 |
| 8 | 9.6 |
| 9 | 10.8 |

| | 11 |
|---|---|
| 1 | 1.1 |
| 2 | 2.2 |
| 3 | 3.3 |
| 4 | 4.4 |
| 5 | 5.5 |
| 6 | 6.6 |
| 7 | 7.7 |
| 8 | 8.8 |
| 9 | 9.9 |

| | 10 |
|---|---|
| 1 | 1.0 |
| 2 | 2.0 |
| 3 | 3.0 |
| 4 | 4.0 |
| 5 | 5.0 |
| 6 | 6.0 |
| 7 | 7.0 |
| 8 | 8.0 |
| 9 | 9.0 |

P.P.

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P. P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 6 0206 | 0217 | 0228 | 0239 | 0249 | 0260 | 0271 | 0282 | 0293 | 0304 | |
| 401 | 0314 | 0325 | 0336 | 0347 | 0358 | 0369 | 0379 | 0390 | 0401 | 0412 | |
| 402 | 0423 | 0433 | 0444 | 0455 | 0466 | 0477 | 0487 | 0498 | 0509 | 0520 | |
| 403 | 0531 | 0541 | 0552 | 0563 | 0574 | 0584 | 0595 | 0606 | 0617 | 0627 | |
| 404 | 0638 | 0649 | 0660 | 0670 | 0681 | 0692 | 0703 | 0713 | 0724 | 0735 | |
| 405 | 6 0746 | 0756 | 0767 | 0778 | 0788 | 0799 | 0810 | 0821 | 0831 | 0842 | |
| 406 | 0853 | 0863 | 0874 | 0885 | 0895 | 0906 | 0917 | 0927 | 0938 | 0949 | |
| 407 | 0959 | 0970 | 0981 | 0991 | 1002 | 1013 | 1023 | 1034 | 1045 | 1055 | 11 |
| 408 | 1066 | 1077 | 1087 | 1098 | 1109 | 1119 | 1130 | 1140 | 1151 | 1162 | 1 1.1 |
| 409 | 1172 | 1183 | 1194 | 1204 | 1215 | 1225 | 1236 | 1247 | 1257 | 1268 | 2 2.2 |
| 410 | 6 1278 | 1289 | 1300 | 1310 | 1321 | 1331 | 1342 | 1352 | 1363 | 1374 | 3 3.3 |
| 411 | 1384 | 1395 | 1405 | 1416 | 1426 | 1437 | 1448 | 1458 | 1469 | 1479 | 4 4.4 |
| 412 | 1490 | 1500 | 1511 | 1521 | 1532 | 1542 | 1553 | 1563 | 1574 | 1584 | 5 5.5 |
| 413 | 1595 | 1606 | 1616 | 1627 | 1637 | 1648 | 1658 | 1669 | 1679 | 1690 | 6 6.6 |
| 414 | 1700 | 1711 | 1721 | 1731 | 1742 | 1752 | 1763 | 1773 | 1784 | 1794 | 7 7.7 |
| 415 | 6 1805 | 1815 | 1826 | 1836 | 1847 | 1857 | 1868 | 1878 | 1888 | 1899 | 8 8.8 |
| 416 | 1909 | 1920 | 1930 | 1941 | 1951 | 1962 | 1972 | 1982 | 1993 | 2003 | 9 9.9 |
| 417 | 2014 | 2024 | 2034 | 2045 | 2055 | 2066 | 2076 | 2086 | 2097 | 2107 | |
| 418 | 2118 | 2128 | 2138 | 2149 | 2159 | 2170 | 2180 | 2190 | 2201 | 2211 | |
| 419 | 2221 | 2232 | 2242 | 2252 | 2263 | 2273 | 2284 | 2294 | 2304 | 2315 | |
| 420 | 6 2325 | 2335 | 2346 | 2356 | 2366 | 2377 | 2387 | 2397 | 2408 | 2418 | |
| 421 | 2428 | 2439 | 2449 | 2459 | 2469 | 2480 | 2490 | 2500 | 2511 | 2521 | 10 |
| 422 | 2531 | 2542 | 2552 | 2562 | 2572 | 2583 | 2593 | 2603 | 2613 | 2624 | 1 1.0 |
| 423 | 2634 | 2644 | 2655 | 2665 | 2675 | 2685 | 2696 | 2706 | 2716 | 2726 | 2 2.0 |
| 424 | 2737 | 2747 | 2757 | 2767 | 2778 | 2788 | 2798 | 2808 | 2818 | 2829 | 3 3.0 |
| 425 | 6 2839 | 2849 | 2859 | 2870 | 2880 | 2890 | 2900 | 2910 | 2921 | 2931 | 4 4.0 |
| 426 | 2941 | 2951 | 2961 | 2972 | 2982 | 2992 | 3002 | 3012 | 3022 | 3033 | 5 5.0 |
| 427 | 3043 | 3053 | 3063 | 3073 | 3083 | 3094 | 3104 | 3114 | 3124 | 3134 | 6 6.0 |
| 428 | 3144 | 3155 | 3165 | 3175 | 3185 | 3195 | 3205 | 3215 | 3225 | 3236 | 7 7.0 |
| 429 | 3246 | 3256 | 3266 | 3276 | 3286 | 3296 | 3306 | 3317 | 3327 | 3337 | 8 8.0 |
| | | | | | | | | | | | 9 9.0 |
| 430 | 6 3347 | 3357 | 3367 | 3377 | 3387 | 3397 | 3407 | 3417 | 3428 | 3438 | |
| 431 | 3448 | 3458 | 3468 | 3478 | 3488 | 3498 | 3508 | 3518 | 3528 | 3538 | |
| 432 | 3548 | 3558 | 3568 | 3579 | 3589 | 3599 | 3609 | 3619 | 3629 | 3639 | |
| 433 | 3649 | 3659 | 3669 | 3679 | 3689 | 3699 | 3709 | 3719 | 3729 | 3739 | |
| 434 | 3749 | 3759 | 3769 | 3779 | 3789 | 3799 | 3809 | 3819 | 3829 | 3839 | |
| 435 | 6 3849 | 3859 | 3869 | 3879 | 3889 | 3899 | 3909 | 3919 | 3929 | 3939 | |
| 436 | 3949 | 3959 | 3969 | 3979 | 3988 | 3998 | 4008 | 4018 | 4028 | 4038 | 9 |
| 437 | 4048 | 4058 | 4068 | 4078 | 4088 | 4098 | 4108 | 4118 | 4128 | 4137 | 1 0.9 |
| 438 | 4147 | 4157 | 4167 | 4177 | 4187 | 4197 | 4207 | 4217 | 4227 | 4237 | 2 1.8 |
| 439 | 4246 | 4256 | 4266 | 4276 | 4286 | 4296 | 4306 | 4316 | 4326 | 4335 | 3 2.7 |
| 440 | 6 4345 | 4355 | 4365 | 4375 | 4385 | 4395 | 4404 | 4414 | 4424 | 4434 | 4 3.6 |
| 441 | 4444 | 4454 | 4464 | 4473 | 4483 | 4493 | 4503 | 4513 | 4523 | 4532 | 5 4.5 |
| 442 | 4542 | 4552 | 4562 | 4572 | 4582 | 4591 | 4601 | 4611 | 4621 | 4631 | 6 5.4 |
| 443 | 4640 | 4650 | 4660 | 4670 | 4680 | 4689 | 4699 | 4709 | 4719 | 4729 | 7 6.3 |
| 444 | 4738 | 4748 | 4758 | 4768 | 4777 | 4787 | 4797 | 4807 | 4816 | 4826 | 8 7.2 |
| 445 | 6 4836 | 4846 | 4856 | 4865 | 4875 | 4885 | 4895 | 4904 | 4914 | 4924 | 9 8.1 |
| 446 | 4933 | 4943 | 4953 | 4963 | 4972 | 4982 | 4992 | 5002 | 5011 | 5021 | |
| 447 | 5031 | 5040 | 5050 | 5060 | 5070 | 5079 | 5089 | 5099 | 5108 | 5118 | |
| 448 | 5128 | 5137 | 5147 | 5157 | 5167 | 5176 | 5186 | 5196 | 5205 | 5215 | |
| 449 | 5225 | 5234 | 5244 | 5254 | 5263 | 5273 | 5283 | 5292 | 5302 | 5312 | |
| 450 | 6 5321 | 5331 | 5341 | 5350 | 5360 | 5369 | 5379 | 5389 | 5398 | 5408 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P. P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 450 | 6 5321 | 5331 | 5341 | 5350 | 5360 | 5369 | 5379 | 5389 | 5398 | 5408 | |
| 451 | 5418 | 5427 | 5437 | 5447 | 5456 | 5466 | 5475 | 5485 | 5495 | 5504 | |
| 452 | 5514 | 5523 | 5533 | 5543 | 5552 | 5562 | 5571 | 5581 | 5591 | 5600 | |
| 453 | 5610 | 5619 | 5629 | 5639 | 5648 | 5658 | 5667 | 5677 | 5686 | 5696 | |
| 454 | 5706 | 5715 | 5725 | 5734 | 5744 | 5753 | 5763 | 5772 | 5782 | 5792 | |
| 455 | 6 5801 | 5811 | 5820 | 5830 | 5839 | 5849 | 5858 | 5868 | 5877 | 5887 | |
| 456 | 5896 | 5906 | 5916 | 5925 | 5935 | 5944 | 5954 | 5963 | 5973 | 5982 | |
| 457 | 5992 | 6001 | 6011 | 6020 | 6030 | 6039 | 6049 | 6058 | 6068 | 6077 | 10 |
| 458 | 6087 | 6096 | 6106 | 6115 | 6124 | 6134 | 6143 | 6153 | 6162 | 6172 | 1 1.0 |
| 459 | 6181 | 6191 | 6200 | 6210 | 6219 | 6229 | 6238 | 6247 | 6257 | 6266 | 2 2.0 |
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| 461 | 6370 | 6380 | 6389 | 6398 | 6408 | 6417 | 6427 | 6436 | 6445 | 6455 | 4 4.0 |
| 462 | 6464 | 6474 | 6483 | 6492 | 6502 | 6511 | 6521 | 6530 | 6539 | 6549 | 5 5.0 |
| 463 | 6558 | 6567 | 6577 | 6586 | 6596 | 6605 | 6614 | 6624 | 6633 | 6642 | 6 6.0 |
| 464 | 6652 | 6661 | 6671 | 6680 | 6689 | 6699 | 6708 | 6717 | 6727 | 6736 | 7 7.0 |
| 465 | 6 6745 | 6755 | 6764 | 6773 | 6783 | 6792 | 6801 | 6811 | 6820 | 6829 | 8 8.0 |
| 466 | 6839 | 6848 | 6857 | 6867 | 6876 | 6885 | 6894 | 6904 | 6913 | 6922 | 9 9.0 |
| 467 | 6932 | 6941 | 6950 | 6960 | 6969 | 6978 | 6987 | 6997 | 7006 | 7015 | |
| 468 | 7025 | 7034 | 7043 | 7052 | 7062 | 7071 | 7080 | 7089 | 7099 | 7108 | |
| 469 | 7117 | 7127 | 7136 | 7145 | 7154 | 7164 | 7173 | 7182 | 7191 | 7201 | |
| 470 | 6 7210 | 7219 | 7228 | 7237 | 7247 | 7256 | 7265 | 7274 | 7284 | 7293 | |
| 471 | 7302 | 7311 | 7321 | 7330 | 7339 | 7348 | 7357 | 7367 | 7376 | 7385 | 9 |
| 472 | 7394 | 7403 | 7413 | 7422 | 7431 | 7440 | 7449 | 7459 | 7468 | 7477 | 1 0.9 |
| 473 | 7486 | 7495 | 7504 | 7514 | 7523 | 7532 | 7541 | 7550 | 7560 | 7569 | 2 1.8 |
| 474 | 7578 | 7587 | 7596 | 7605 | 7614 | 7624 | 7633 | 7642 | 7651 | 7660 | 3 2.7 |
| 475 | 6 7669 | 7679 | 7688 | 7697 | 7706 | 7715 | 7724 | 7733 | 7742 | 7752 | 4 3.6 |
| 476 | 7761 | 7770 | 7779 | 7788 | 7797 | 7806 | 7815 | 7825 | 7834 | 7843 | 5 4.5 |
| 477 | 7852 | 7861 | 7870 | 7879 | 7888 | 7897 | 7906 | 7916 | 7925 | 7934 | 6 5.4 |
| 478 | 7943 | 7952 | 7961 | 7970 | 7979 | 7988 | 7997 | 8006 | 8015 | 8024 | 7 6.3 |
| 479 | 8034 | 8043 | 8052 | 8061 | 8070 | 8079 | 8088 | 8097 | 8106 | 8115 | 8 7.2 |
| 480 | 6 8124 | 8133 | 8142 | 8151 | 8160 | 8169 | 8178 | 8187 | 8196 | 8205 | 9 8.1 |
| 481 | 8215 | 8224 | 8233 | 8242 | 8251 | 8260 | 8269 | 8278 | 8287 | 8296 | |
| 482 | 8305 | 8314 | 8323 | 8332 | 8341 | 8350 | 8359 | 8368 | 8377 | 8386 | |
| 483 | 8395 | 8404 | 8413 | 8422 | 8431 | 8440 | 8449 | 8458 | 8467 | 8476 | |
| 484 | 8485 | 8494 | 8502 | 8511 | 8520 | 8529 | 8538 | 8547 | 8556 | 8565 | |
| 485 | 6 8574 | 8583 | 8592 | 8601 | 8610 | 8619 | 8628 | 8637 | 8646 | 8655 | |
| 486 | 8664 | 8673 | 8681 | 8690 | 8699 | 8708 | 8717 | 8726 | 8735 | 8744 | 8 |
| 487 | 8753 | 8762 | 8771 | 8780 | 8789 | 8797 | 8806 | 8815 | 8824 | 8833 | 1 0.8 |
| 488 | 8842 | 8851 | 8860 | 8869 | 8878 | 8886 | 8895 | 8904 | 8913 | 8922 | 2 1.6 |
| 489 | 8931 | 8940 | 8949 | 8958 | 8966 | 8975 | 8984 | 8993 | 9002 | 9011 | 3 2.4 |
| 490 | 6 9020 | 9028 | 9037 | 9046 | 9055 | 9064 | 9073 | 9082 | 9090 | 9099 | 4 3.2 |
| 491 | 9108 | 9117 | 9126 | 9135 | 9144 | 9152 | 9161 | 9170 | 9179 | 9188 | 5 4.0 |
| 492 | 9197 | 9205 | 9214 | 9223 | 9232 | 9241 | 9249 | 9258 | 9267 | 9276 | 6 4.8 |
| 493 | 9285 | 9294 | 9302 | 9311 | 9320 | 9329 | 9338 | 9346 | 9355 | 9364 | 7 5.6 |
| 494 | 9373 | 9381 | 9390 | 9399 | 9408 | 9417 | 9425 | 9434 | 9443 | 9452 | 8 6.4 |
| 495 | 6 9461 | 9469 | 9478 | 9487 | 9496 | 9504 | 9513 | 9522 | 9531 | 9539 | 9 7.2 |
| 496 | 9548 | 9557 | 9566 | 9574 | 9583 | 9592 | 9601 | 9609 | 9618 | 9627 | |
| 497 | 9636 | 9644 | 9653 | 9662 | 9671 | 9679 | 9688 | 9697 | 9705 | 9714 | |
| 498 | 9723 | 9732 | 9740 | 9749 | 9758 | 9767 | 9775 | 9784 | 9793 | 9801 | |
| 499 | 9810 | 9819 | 9827 | 9836 | 9845 | 9854 | 9862 | 9871 | 9880 | 9888 | |
| 500 | 6 9897 | 9906 | 9914 | 9923 | 9932 | 9940 | 9949 | 9958 | 9966 | 9975 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P. P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 500 | 6 9897 | 9906 | 9914 | 9923 | 9932 | 9940 | 9949 | 9958 | 9966 | 9975 | |
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| 502 | 7 0070 | 0079 | 0088 | 0096 | 0105 | 0114 | 0122 | 0131 | 0140 | 0148 | |
| 503 | 0157 | 0165 | 0174 | 0183 | 0191 | 0200 | 0209 | 0217 | 0226 | 0234 | |
| 504 | 0243 | 0252 | 0260 | 0269 | 0278 | 0286 | 0295 | 0303 | 0312 | 0321 | |
| 505 | 7 0329 | 0338 | 0346 | 0355 | 0364 | 0372 | 0381 | 0389 | 0398 | 0406 | |
| 506 | 0415 | 0424 | 0432 | 0441 | 0449 | 0458 | 0467 | 0475 | 0484 | 0492 | |
| 507 | 0501 | 0509 | 0518 | 0526 | 0535 | 0544 | 0552 | 0561 | 0569 | 0578 | 9 |
| 508 | 0586 | 0595 | 0603 | 0612 | 0621 | 0629 | 0638 | 0646 | 0655 | 0663 | 1 0.9 |
| 509 | 0672 | 0680 | 0689 | 0697 | 0706 | 0714 | 0723 | 0731 | 0740 | 0749 | 2 1.8 |
| 510 | 7 0757 | 0766 | 0774 | 0783 | 0791 | 0800 | 0808 | 0817 | 0825 | 0834 | 3 2.7 |
| 511 | 0842 | 0851 | 0859 | 0868 | 0876 | 0885 | 0893 | 0902 | 0910 | 0919 | 4 3.6 |
| 512 | 0927 | 0935 | 0944 | 0952 | 0961 | 0969 | 0978 | 0986 | 0995 | 1003 | 5 4.5 |
| 513 | 1012 | 1020 | 1029 | 1037 | 1046 | 1054 | 1063 | 1071 | 1079 | 1088 | 6 5.4 |
| 514 | 1096 | 1105 | 1113 | 1122 | 1130 | 1139 | 1147 | 1155 | 1164 | 1172 | 7 6.3 |
| 515 | 7 1181 | 1189 | 1198 | 1206 | 1214 | 1223 | 1231 | 1240 | 1248 | 1257 | 8 7.2 |
| 516 | 1265 | 1273 | 1282 | 1290 | 1299 | 1307 | 1315 | 1324 | 1332 | 1341 | 9 8.1 |
| 517 | 1349 | 1357 | 1366 | 1374 | 1383 | 1391 | 1399 | 1408 | 1416 | 1425 | |
| 518 | 1433 | 1441 | 1450 | 1458 | 1466 | 1475 | 1483 | 1492 | 1500 | 1508 | |
| 519 | 1517 | 1525 | 1533 | 1542 | 1550 | 1559 | 1567 | 1575 | 1584 | 1592 | |
| 520 | 7 1600 | 1609 | 1617 | 1625 | 1634 | 1642 | 1650 | 1659 | 1667 | 1675 | |
| 521 | 1684 | 1692 | 1700 | 1709 | 1717 | 1725 | 1734 | 1742 | 1750 | 1759 | 8 |
| 522 | 1767 | 1775 | 1784 | 1792 | 1800 | 1809 | 1817 | 1825 | 1834 | 1842 | 1 0.8 |
| 523 | 1850 | 1858 | 1867 | 1875 | 1883 | 1892 | 1900 | 1908 | 1917 | 1925 | 2 1.6 |
| 524 | 1933 | 1941 | 1950 | 1958 | 1966 | 1975 | 1983 | 1991 | 1999 | 2008 | 3 2.4 |
| 525 | 7 2016 | 2024 | 2032 | 2041 | 2049 | 2057 | 2066 | 2074 | 2082 | 2090 | 4 3.2 |
| 526 | 2099 | 2107 | 2115 | 2123 | 2132 | 2140 | 2148 | 2156 | 2165 | 2173 | 5 4.0 |
| 527 | 2181 | 2189 | 2198 | 2206 | 2214 | 2222 | 2230 | 2239 | 2247 | 2255 | 6 4.8 |
| 528 | 2263 | 2272 | 2280 | 2288 | 2296 | 2304 | 2313 | 2321 | 2329 | 2337 | 7 5.6 |
| 529 | 2346 | 2354 | 2362 | 2370 | 2378 | 2387 | 2395 | 2403 | 2411 | 2419 | 8 6.4 |
| 530 | 7 2428 | 2436 | 2444 | 2452 | 2460 | 2469 | 2477 | 2485 | 2493 | 2501 | 9 7.2 |
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| 533 | 2673 | 2681 | 2689 | 2697 | 2705 | 2713 | 2722 | 2730 | 2738 | 2746 | |
| 534 | 2754 | 2762 | 2770 | 2779 | 2787 | 2795 | 2803 | 2811 | 2819 | 2827 | |
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| 536 | 2916 | 2925 | 2933 | 2941 | 2949 | 2957 | 2965 | 2973 | 2981 | 2989 | 1 0.7 |
| 537 | 2997 | 3006 | 3014 | 3022 | 3030 | 3038 | 3046 | 3054 | 3062 | 3070 | 2 1.4 |
| 538 | 3078 | 3086 | 3094 | 3102 | 3111 | 3119 | 3127 | 3135 | 3143 | 3151 | 3 2.1 |
| 539 | 3159 | 3167 | 3175 | 3183 | 3191 | 3199 | 3207 | 3215 | 3223 | 3231 | 4 2.8 |
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| 541 | 3320 | 3328 | 3336 | 3344 | 3352 | 3360 | 3368 | 3376 | 3384 | 3392 | 6 4.2 |
| 542 | 3400 | 3408 | 3416 | 3424 | 3432 | 3440 | 3448 | 3456 | 3464 | 3472 | 7 4.9 |
| 543 | 3480 | 3488 | 3496 | 3504 | 3512 | 3520 | 3528 | 3536 | 3544 | 3552 | 8 5.6 |
| 544 | 3560 | 3568 | 3576 | 3584 | 3592 | 3600 | 3608 | 3616 | 3624 | 3632 | 9 6.3 |
| 545 | 7 3640 | 3648 | 3656 | 3664 | 3672 | 3679 | 3687 | 3695 | 3703 | 3711 | |
| 546 | 3719 | 3727 | 3735 | 3743 | 3751 | 3759 | 3767 | 3775 | 3783 | 3791 | |
| 547 | 3799 | 3807 | 3815 | 3823 | 3830 | 3838 | 3846 | 3854 | 3862 | 3870 | |
| 548 | 3878 | 3886 | 3894 | 3902 | 3910 | 3918 | 3926 | 3933 | 3941 | 3949 | |
| 549 | 3957 | 3965 | 3973 | 3981 | 3989 | 3997 | 4005 | 4013 | 4020 | 4028 | |
| 550 | 7 4036 | 4044 | 4052 | 4060 | 4068 | 4076 | 4084 | 4092 | 4099 | 4107 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 550 | 7 4036 | 4044 | 4052 | 4060 | 4068 | 4076 | 4084 | 4092 | 4099 | 4107 | |
| 551 | 4115 | 4123 | 4131 | 4139 | 4147 | 4155 | 4162 | 4170 | 4178 | 4186 | |
| 552 | 4194 | 4202 | 4210 | 4218 | 4225 | 4233 | 4241 | 4249 | 4257 | 4265 | |
| 553 | 4273 | 4280 | 4288 | 4296 | 4304 | 4312 | 4320 | 4327 | 4335 | 4343 | |
| 554 | 4351 | 4359 | 4367 | 4374 | 4382 | 4390 | 4398 | 4406 | 4414 | 4421 | |
| 555 | 7 4429 | 4437 | 4445 | 4453 | 4461 | 4468 | 4476 | 4484 | 4492 | 4500 | |
| 556 | 4507 | 4515 | 4523 | 4531 | 4539 | 4547 | 4554 | 4562 | 4570 | 4578 | |
| 557 | 4586 | 4593 | 4601 | 4609 | 4617 | 4624 | 4632 | 4640 | 4648 | 4656 | |
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| 559 | 4741 | 4749 | 4757 | 4764 | 4772 | 4780 | 4788 | 4796 | 4803 | 4811 | |
| 560 | 7 4819 | 4827 | 4834 | 4842 | 4850 | 4858 | 4865 | 4873 | 4881 | 4889 | |
| 561 | 4896 | 4904 | 4912 | 4920 | 4927 | 4935 | 4943 | 4950 | 4958 | 4966 | 8 |
| 562 | 4974 | 4981 | 4989 | 4997 | 5005 | 5012 | 5020 | 5028 | 5035 | 5043 | 1 0.8 |
| 563 | 5051 | 5059 | 5066 | 5074 | 5082 | 5089 | 5097 | 5105 | 5113 | 5120 | 2 1.6 |
| 564 | 5128 | 5136 | 5143 | 5151 | 5159 | 5166 | 5174 | 5182 | 5189 | 5197 | 3 2.4, 4 3.2 |
| 565 | 7 5205 | 5213 | 5220 | 5228 | 5236 | 5243 | 5251 | 5259 | 5266 | 5274 | 5 4.0 |
| 566 | 5282 | 5289 | 5297 | 5305 | 5312 | 5320 | 5328 | 5335 | 5343 | 5351 | 6 4.8 |
| 567 | 5358 | 5366 | 5374 | 5381 | 5389 | 5397 | 5404 | 5412 | 5420 | 5427 | 7 5.6 |
| 568 | 5435 | 5442 | 5450 | 5458 | 5465 | 5473 | 5481 | 5488 | 5496 | 5504 | 8 6.4 |
| 569 | 5511 | 5519 | 5526 | 5534 | 5542 | 5549 | 5557 | 5565 | 5572 | 5580 | 9 7.2 |
| 570 | 7 5587 | 5595 | 5603 | 5610 | 5618 | 5626 | 5633 | 5641 | 5648 | 5656 | |
| 571 | 5664 | 5671 | 5679 | 5686 | 5694 | 5702 | 5709 | 5717 | 5724 | 5732 | |
| 572 | 5740 | 5747 | 5755 | 5762 | 5770 | 5778 | 5785 | 5793 | 5800 | 5808 | |
| 573 | 5815 | 5823 | 5831 | 5838 | 5846 | 5853 | 5861 | 5868 | 5876 | 5884 | |
| 574 | 5891 | 5899 | 5906 | 5914 | 5921 | 5929 | 5937 | 5944 | 5952 | 5959 | |
| 575 | 7 5967 | 5974 | 5982 | 5989 | 5997 | 6005 | 6012 | 6020 | 6027 | 6035 | |
| 576 | 6042 | 6050 | 6057 | 6065 | 6072 | 6080 | 6087 | 6095 | 6103 | 6110 | |
| 577 | 6118 | 6125 | 6133 | 6140 | 6148 | 6155 | 6163 | 6170 | 6178 | 6185 | |
| 578 | 6193 | 6200 | 6208 | 6215 | 6223 | 6230 | 6238 | 6245 | 6253 | 6260 | |
| 579 | 6268 | 6275 | 6283 | 6290 | 6298 | 6305 | 6313 | 6320 | 6328 | 6335 | |
| 580 | 7 6343 | 6350 | 6358 | 6365 | 6373 | 6380 | 6388 | 6395 | 6403 | 6410 | |
| 581 | 6418 | 6425 | 6433 | 6440 | 6448 | 6455 | 6462 | 6470 | 6477 | 6485 | 7 |
| 582 | 6492 | 6500 | 6507 | 6515 | 6522 | 6530 | 6537 | 6545 | 6552 | 6559 | 1 0.7 |
| 583 | 6567 | 6574 | 6582 | 6589 | 6597 | 6604 | 6612 | 6619 | 6626 | 6634 | 2 1.4 |
| 584 | 6641 | 6649 | 6656 | 6664 | 6671 | 6678 | 6686 | 6693 | 6701 | 6708 | 3 2.1 |
| 585 | 7 6716 | 6723 | 6730 | 6738 | 6745 | 6753 | 6760 | 6768 | 6775 | 6782 | 4 2.8 |
| 586 | 6790 | 6797 | 6805 | 6812 | 6819 | 6827 | 6834 | 6842 | 6849 | 6856 | 5 3.5, 6 4.2 |
| 587 | 6864 | 6871 | 6879 | 6886 | 6893 | 6901 | 6908 | 6916 | 6923 | 6930 | 7 4.9 |
| 588 | 6938 | 6945 | 6953 | 6960 | 6967 | 6975 | 6982 | 6989 | 6997 | 7004 | 8 5.6 |
| 589 | 7012 | 7019 | 7026 | 7034 | 7041 | 7048 | 7056 | 7063 | 7070 | 7078 | 9 6.3 |
| 590 | 7 7085 | 7093 | 7100 | 7107 | 7115 | 7122 | 7129 | 7137 | 7144 | 7151 | |
| 591 | 7159 | 7166 | 7173 | 7181 | 7188 | 7195 | 7203 | 7210 | 7217 | 7225 | |
| 592 | 7232 | 7240 | 7247 | 7254 | 7262 | 7269 | 7276 | 7283 | 7291 | 7298 | |
| 593 | 7305 | 7313 | 7320 | 7327 | 7335 | 7342 | 7349 | 7357 | 7364 | 7371 | |
| 594 | 7379 | 7386 | 7393 | 7401 | 7408 | 7415 | 7422 | 7430 | 7437 | 7444 | |
| 595 | 7452 | 7459 | 7466 | 7474 | 7481 | 7488 | 7495 | 7503 | 7510 | 7517 | |
| 596 | 7525 | 7532 | 7539 | 7546 | 7554 | 7561 | 7568 | 7576 | 7583 | 7590 | |
| 597 | 7597 | 7605 | 7612 | 7619 | 7627 | 7634 | 7641 | 7648 | 7656 | 7663 | |
| 598 | 7670 | 7677 | 7685 | 7692 | 7699 | 7706 | 7714 | 7721 | 7728 | 7735 | |
| 599 | 7743 | 7750 | 7757 | 7764 | 7772 | 7779 | 7786 | 7793 | 7801 | 7808 | |
| 600 | 7 7815 | 7822 | 7830 | 7837 | 7844 | 7851 | 7859 | 7866 | 7873 | 7880 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | 7 7815 | 7822 | 7830 | 7837 | 7844 | 7851 | 7859 | 7866 | 7873 | 7880 | |
| 601 | 7887 | 7895 | 7902 | 7909 | 7916 | 7924 | 7931 | 7938 | 7945 | 7952 | |
| 602 | 7960 | 7967 | 7974 | 7981 | 7988 | 7996 | 8003 | 8010 | 8017 | 8025 | |
| 603 | 8032 | 8039 | 8046 | 8053 | 8061 | 8068 | 8075 | 8082 | 8089 | 8097 | |
| 604 | 8104 | 8111 | 8118 | 8125 | 8132 | 8140 | 8147 | 8154 | 8161 | 8168 | |
| 605 | 7 8176 | 8183 | 8190 | 8197 | 8204 | 8211 | 8219 | 8226 | 8233 | 8240 | |
| 606 | 8247 | 8254 | 8262 | 8269 | 8276 | 8283 | 8290 | 8297 | 8305 | 8312 | |
| 607 | 8319 | 8326 | 8333 | 8340 | 8347 | 8355 | 8362 | 8369 | 8376 | 8383 | 8 |
| 608 | 8390 | 8398 | 8405 | 8412 | 8419 | 8426 | 8433 | 8440 | 8447 | 8455 | 1 0.8 |
| 609 | 8462 | 8469 | 8476 | 8483 | 8490 | 8497 | 8504 | 8512 | 8519 | 8526 | 2 1.6 |
| 610 | 7 8533 | 8540 | 8547 | 8554 | 8561 | 8569 | 8576 | 8583 | 8590 | 8597 | 3 2.4 |
| 611 | 8604 | 8611 | 8618 | 8625 | 8633 | 8640 | 8647 | 8654 | 8661 | 8668 | 4 3.2 |
| 612 | 8675 | 8682 | 8689 | 8696 | 8704 | 8711 | 8718 | 8725 | 8732 | 8739 | 5 4.0 |
| 613 | 8746 | 8753 | 8760 | 8767 | 8774 | 8781 | 8789 | 8796 | 8803 | 8810 | 6 4.8 |
| 614 | 8817 | 8824 | 8831 | 8838 | 8845 | 8852 | 8859 | 8866 | 8873 | 8880 | 7 5.6 |
| 615 | 7 8888 | 8895 | 8902 | 8909 | 8916 | 8923 | 8930 | 8937 | 8944 | 8951 | 8 6.4 |
| 616 | 8958 | 8965 | 8972 | 8979 | 8986 | 8993 | 9000 | 9007 | 9014 | 9021 | 9 7.2 |
| 617 | 9029 | 9036 | 9043 | 9050 | 9057 | 9064 | 9071 | 9078 | 9085 | 9092 | |
| 618 | 9099 | 9106 | 9113 | 9120 | 9127 | 9134 | 9141 | 9148 | 9155 | 9162 | |
| 619 | 9169 | 9176 | 9183 | 9190 | 9197 | 9204 | 9211 | 9218 | 9225 | 9232 | |
| 620 | 7 9239 | 9246 | 9253 | 9260 | 9267 | 9274 | 9281 | 9288 | 9295 | 9302 | |
| 621 | 9309 | 9316 | 9323 | 9330 | 9337 | 9344 | 9351 | 9358 | 9365 | 9372 | |
| 622 | 9379 | 9386 | 9393 | 9400 | 9407 | 9414 | 9421 | 9428 | 9435 | 9442 | 7 |
| 623 | 9449 | 9456 | 9463 | 9470 | 9477 | 9484 | 9491 | 9498 | 9505 | 9511 | 1 0.7 |
| 624 | 9518 | 9525 | 9532 | 9539 | 9546 | 9553 | 9560 | 9567 | 9574 | 9581 | 2 1.4 |
| 625 | 7 9588 | 9595 | 9602 | 9609 | 9616 | 9623 | 9630 | 9637 | 9644 | 9650 | 3 2.1 |
| 626 | 9657 | 9664 | 9671 | 9678 | 9685 | 9692 | 9699 | 9706 | 9713 | 9720 | 4 2.8 |
| 627 | 9727 | 9734 | 9741 | 9748 | 9754 | 9761 | 9768 | 9775 | 9782 | 9789 | 5 3.5 |
| 628 | 9796 | 9803 | 9810 | 9817 | 9824 | 9831 | 9837 | 9844 | 9851 | 9858 | 6 4.2 |
| 629 | 9865 | 9872 | 9879 | 9886 | 9893 | 9900 | 9906 | 9913 | 9920 | 9927 | 7 4.9 |
| 630 | 7 9934 | 9941 | 9948 | 9955 | 9962 | 9969 | 9975 | 9982 | 9989 | 9996 | 8 5.6 |
| 631 | 8 0003 | 0010 | 0017 | 0024 | 0030 | 0037 | 0044 | 0051 | 0058 | 0065 | 9 6.3 |
| 632 | 0072 | 0079 | 0085 | 0092 | 0099 | 0106 | 0113 | 0120 | 0127 | 0134 | |
| 633 | 0140 | 0147 | 0154 | 0161 | 0168 | 0175 | 0182 | 0188 | 0195 | 0202 | |
| 634 | 0209 | 0216 | 0223 | 0229 | 0236 | 0243 | 0250 | 0257 | 0264 | 0271 | |
| 635 | 8 0277 | 0284 | 0291 | 0298 | 0305 | 0312 | 0318 | 0325 | 0332 | 0339 | |
| 636 | 0346 | 0353 | 0359 | 0366 | 0373 | 0380 | 0387 | 0393 | 0400 | 0407 | 6 |
| 637 | 0414 | 0421 | 0428 | 0434 | 0441 | 0448 | 0455 | 0462 | 0468 | 0475 | 1 0.6 |
| 638 | 0482 | 0489 | 0496 | 0502 | 0509 | 0516 | 0523 | 0530 | 0536 | 0543 | 2 1.2 |
| 639 | 0550 | 0557 | 0564 | 0570 | 0577 | 0584 | 0591 | 0598 | 0604 | 0611 | 3 1.8 |
| 640 | 8 0618 | 0625 | 0632 | 0638 | 0645 | 0652 | 0659 | 0665 | 0672 | 0679 | 4 2.4 |
| 641 | 0686 | 0693 | 0699 | 0706 | 0713 | 0720 | 0726 | 0733 | 0740 | 0747 | 5 3.0 |
| 642 | 0754 | 0760 | 0767 | 0774 | 0781 | 0787 | 0794 | 0801 | 0808 | 0814 | 6 3.6 |
| 643 | 0821 | 0828 | 0835 | 0841 | 0848 | 0855 | 0862 | 0868 | 0875 | 0882 | 7 4.2 |
| 644 | 0889 | 0895 | 0902 | 0909 | 0916 | 0922 | 0929 | 0936 | 0943 | 0949 | 8 4.8 |
| 645 | 8 0956 | 0963 | 0969 | 0976 | 0983 | 0990 | 0996 | 1003 | 1010 | 1017 | 9 5.4 |
| 646 | 1023 | 1030 | 1037 | 1043 | 1050 | 1057 | 1064 | 1070 | 1077 | 1084 | |
| 647 | 1090 | 1097 | 1104 | 1111 | 1117 | 1124 | 1131 | 1137 | 1144 | 1151 | |
| 648 | 1158 | 1164 | 1171 | 1178 | 1184 | 1191 | 1198 | 1204 | 1211 | 1218 | |
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| 650 | 8 1291 | 1298 | 1305 | 1311 | 1318 | 1325 | 1331 | 1338 | 1345 | 1351 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 650 | 8 1291 | 1298 | 1305 | 1311 | 1318 | 1325 | 1331 | 1338 | 1345 | 1351 | |
| 651 | 1358 | 1365 | 1371 | 1378 | 1385 | 1391 | 1398 | 1405 | 1411 | 1418 | |
| 652 | 1425 | 1431 | 1438 | 1445 | 1451 | 1458 | 1465 | 1471 | 1478 | 1485 | |
| 653 | 1491 | 1498 | 1505 | 1511 | 1518 | 1525 | 1531 | 1538 | 1544 | 1551 | |
| 654 | 1558 | 1564 | 1571 | 1578 | 1584 | 1591 | 1598 | 1604 | 1611 | 1617 | |
| 655 | 8 1624 | 1631 | 1637 | 1644 | 1651 | 1657 | 1664 | 1671 | 1677 | 1684 | |
| 656 | 1690 | 1697 | 1704 | 1710 | 1717 | 1723 | 1730 | 1737 | 1743 | 1750 | |
| 657 | 1757 | 1763 | 1770 | 1776 | 1783 | 1790 | 1796 | 1803 | 1809 | 1816 | |
| 658 | 1823 | 1829 | 1836 | 1842 | 1849 | 1856 | 1862 | 1869 | 1875 | 1882 | |
| 659 | 1889 | 1895 | 1902 | 1908 | 1915 | 1921 | 1928 | 1935 | 1941 | 1948 | |
| 660 | 8 1954 | 1961 | 1968 | 1974 | 1981 | 1987 | 1994 | 2000 | 2007 | 2014 | |
| 661 | 2020 | 2027 | 2033 | 2040 | 2046 | 2053 | 2060 | 2066 | 2073 | 2079 | 7 |
| 662 | 2086 | 2092 | 2099 | 2105 | 2112 | 2119 | 2125 | 2132 | 2138 | 2145 | 1 0.7 |
| 663 | 2151 | 2158 | 2164 | 2171 | 2178 | 2184 | 2191 | 2197 | 2204 | 2210 | 2 1.4 |
| 664 | 2217 | 2223 | 2230 | 2236 | 2243 | 2249 | 2256 | 2263 | 2269 | 2276 | 3 2.1 |
| 665 | 8 2282 | 2289 | 2295 | 2302 | 2308 | 2315 | 2321 | 2328 | 2334 | 2341 | 4 2.8 |
| 666 | 2347 | 2354 | 2360 | 2367 | 2373 | 2380 | 2387 | 2393 | 2400 | 2406 | 5 3.5 |
| 667 | 2413 | 2419 | 2426 | 2432 | 2439 | 2445 | 2452 | 2458 | 2465 | 2471 | 6 4.2 |
| 668 | 2478 | 2484 | 2491 | 2497 | 2504 | 2510 | 2517 | 2523 | 2530 | 2536 | 7 4.9 |
| 669 | 2543 | 2549 | 2556 | 2562 | 2569 | 2575 | 2582 | 2588 | 2595 | 2601 | 8 5.6 |
| 670 | 8 2607 | 2614 | 2620 | 2627 | 2633 | 2640 | 2646 | 2653 | 2659 | 2666 | 9 6.3 |
| 671 | 2672 | 2679 | 2685 | 2692 | 2698 | 2705 | 2711 | 2718 | 2724 | 2730 | |
| 672 | 2737 | 2743 | 2750 | 2756 | 2763 | 2769 | 2776 | 2782 | 2789 | 2795 | |
| 673 | 2802 | 2808 | 2814 | 2821 | 2827 | 2834 | 2840 | 2847 | 2853 | 2860 | |
| 674 | 2866 | 2872 | 2879 | 2885 | 2892 | 2898 | 2905 | 2911 | 2918 | 2924 | |
| 675 | 8 2930 | 2937 | 2943 | 2950 | 2956 | 2963 | 2969 | 2975 | 2982 | 2988 | |
| 676 | 2995 | 3001 | 3008 | 3014 | 3020 | 3027 | 3033 | 3040 | 3046 | 3052 | |
| 677 | 3059 | 3065 | 3072 | 3078 | 3085 | 3091 | 3097 | 3104 | 3110 | 3117 | |
| 678 | 3123 | 3129 | 3136 | 3142 | 3149 | 3155 | 3161 | 3168 | 3174 | 3181 | |
| 679 | 3187 | 3193 | 3200 | 3206 | 3213 | 3219 | 3225 | 3232 | 3238 | 3245 | |
| 680 | 8 3251 | 3257 | 3264 | 3270 | 3276 | 3283 | 3289 | 3296 | 3302 | 3308 | |
| 681 | 3315 | 3321 | 3327 | 3334 | 3340 | 3347 | 3353 | 3359 | 3366 | 3372 | 6 |
| 682 | 3378 | 3385 | 3391 | 3398 | 3404 | 3410 | 3417 | 3423 | 3429 | 3436 | 1 0.6 |
| 683 | 3442 | 3448 | 3455 | 3461 | 3467 | 3474 | 3480 | 3487 | 3493 | 3499 | 2 1.2 |
| 684 | 3506 | 3512 | 3518 | 3525 | 3531 | 3537 | 3544 | 3550 | 3556 | 3563 | 3 1.8 |
| 685 | 8 3569 | 3575 | 3582 | 3588 | 3594 | 3601 | 3607 | 3613 | 3620 | 3626 | 4 2.4 |
| 686 | 3632 | 3639 | 3645 | 3651 | 3658 | 3664 | 3670 | 3677 | 3683 | 3689 | 5 3.0 |
| 687 | 3696 | 3702 | 3708 | 3715 | 3721 | 3727 | 3734 | 3740 | 3746 | 3753 | 6 3.6 |
| 688 | 3759 | 3765 | 3771 | 3778 | 3784 | 3790 | 3797 | 3803 | 3809 | 3816 | 7 4.2 |
| 689 | 3822 | 3828 | 3835 | 3841 | 3847 | 3853 | 3860 | 3866 | 3872 | 3879 | 8 4.8 |
| 690 | 8 3885 | 3891 | 3897 | 3904 | 3910 | 3916 | 3923 | 3929 | 3935 | 3942 | 9 5.4 |
| 691 | 3948 | 3954 | 3960 | 3967 | 3973 | 3979 | 3985 | 3992 | 3998 | 4004 | |
| 692 | 4011 | 4017 | 4023 | 4029 | 4036 | 4042 | 4048 | 4055 | 4061 | 4067 | |
| 693 | 4073 | 4080 | 4086 | 4092 | 4098 | 4105 | 4111 | 4117 | 4123 | 4130 | |
| 694 | 4136 | 4142 | 4148 | 4155 | 4161 | 4167 | 4173 | 4180 | 4186 | 4192 | |
| 695 | 8 4198 | 4205 | 4211 | 4217 | 4223 | 4230 | 4236 | 4242 | 4248 | 4255 | |
| 696 | 4261 | 4267 | 4273 | 4280 | 4286 | 4292 | 4298 | 4305 | 4311 | 4317 | |
| 697 | 4323 | 4330 | 4336 | 4342 | 4348 | 4354 | 4361 | 4367 | 4373 | 4379 | |
| 698 | 4386 | 4392 | 4398 | 4404 | 4410 | 4417 | 4423 | 4429 | 4435 | 4442 | |
| 699 | 4448 | 4454 | 4460 | 4466 | 4473 | 4479 | 4485 | 4491 | 4497 | 4504 | |
| 700 | 8 4510 | 4516 | 4522 | 4528 | 4535 | 4541 | 4547 | 4553 | 4559 | 4566 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P. P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P. P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 8 4510 | 4516 | 4522 | 4528 | 4535 | 4541 | 4547 | 4553 | 4559 | 4566 | |
| 701 | 4572 | 4578 | 4584 | 4590 | 4597 | 4603 | 4609 | 4615 | 4621 | 4628 | |
| 702 | 4634 | 4640 | 4646 | 4652 | 4658 | 4665 | 4671 | 4677 | 4683 | 4689 | |
| 703 | 4696 | 4702 | 4708 | 4714 | 4720 | 4726 | 4733 | 4739 | 4745 | 4751 | |
| 704 | 4757 | 4763 | 4770 | 4776 | 4782 | 4788 | 4794 | 4800 | 4807 | 4813 | |
| 705 | 8 4819 | 4825 | 4831 | 4837 | 4844 | 4850 | 4856 | 4862 | 4868 | 4874 | |
| 706 | 4880 | 4887 | 4893 | 4899 | 4905 | 4911 | 4917 | 4924 | 4930 | 4936 | |
| 707 | 4942 | 4948 | 4954 | 4960 | 4967 | 4973 | 4979 | 4985 | 4991 | 4997 | 7 |
| 708 | 5003 | 5009 | 5016 | 5022 | 5028 | 5034 | 5040 | 5046 | 5052 | 5058 | 1 0.7 |
| 709 | 5065 | 5071 | 5077 | 5083 | 5089 | 5095 | 5101 | 5107 | 5114 | 5120 | 2 1.4 |
| 710 | 8 5126 | 5132 | 5138 | 5144 | 5150 | 5156 | 5163 | 5169 | 5175 | 5181 | 3 2.1 |
| 711 | 5187 | 5193 | 5199 | 5205 | 5211 | 5217 | 5224 | 5230 | 5236 | 5242 | 4 2.8 |
| 712 | 5248 | 5254 | 5260 | 5266 | 5272 | 5278 | 5285 | 5291 | 5297 | 5303 | 5 3.5 |
| 713 | 5309 | 5315 | 5321 | 5327 | 5333 | 5339 | 5345 | 5352 | 5358 | 5364 | 6 4.2 |
| 714 | 5370 | 5376 | 5382 | 5388 | 5394 | 5400 | 5406 | 5412 | 5418 | 5425 | 7 4.9 |
| 715 | 8 5431 | 5437 | 5443 | 5449 | 5455 | 5461 | 5467 | 5473 | 5479 | 5485 | 8 5.6 |
| 716 | 5491 | 5497 | 5503 | 5509 | 5516 | 5522 | 5528 | 5534 | 5540 | 5546 | 9 6.3 |
| 717 | 5552 | 5558 | 5564 | 5570 | 5576 | 5582 | 5588 | 5594 | 5600 | 5606 | |
| 718 | 5612 | 5618 | 5625 | 5631 | 5637 | 5643 | 5649 | 5655 | 5661 | 5667 | |
| 719 | 5673 | 5679 | 5685 | 5691 | 5697 | 5703 | 5709 | 5715 | 5721 | 5727 | |
| 720 | 8 5733 | 5739 | 5745 | 5751 | 5757 | 5763 | 5769 | 5775 | 5781 | 5788 | |
| 721 | 5794 | 5800 | 5806 | 5812 | 5818 | 5824 | 5830 | 5836 | 5842 | 5848 | 6 |
| 722 | 5854 | 5860 | 5866 | 5872 | 5878 | 5884 | 5890 | 5896 | 5902 | 5908 | 1 0.6 |
| 723 | 5914 | 5920 | 5926 | 5932 | 5938 | 5944 | 5950 | 5956 | 5962 | 5968 | 2 1.2 |
| 724 | 5974 | 5980 | 5986 | 5992 | 5998 | 6004 | 6010 | 6016 | 6022 | 6028 | 3 1.8 |
| 725 | 8 6034 | 6040 | 6046 | 6052 | 6058 | 6064 | 6070 | 6076 | 6082 | 6088 | 4 2.4 |
| 726 | 6094 | 6100 | 6106 | 6112 | 6118 | 6124 | 6130 | 6136 | 6141 | 6147 | 5 3.0 |
| 727 | 6153 | 6159 | 6165 | 6171 | 6177 | 6183 | 6189 | 6195 | 6201 | 6207 | 6 3.6 |
| 728 | 6213 | 6219 | 6225 | 6231 | 6237 | 6243 | 6249 | 6255 | 6261 | 6267 | 7 4.2 |
| 729 | 6273 | 6279 | 6285 | 6291 | 6297 | 6303 | 6308 | 6314 | 6320 | 6326 | 8 4.8 |
| 730 | 8 6332 | 6338 | 6344 | 6350 | 6356 | 6362 | 6368 | 6374 | 6380 | 6386 | 9 5.4 |
| 731 | 6392 | 6398 | 6404 | 6410 | 6415 | 6421 | 6427 | 6433 | 6439 | 6445 | |
| 732 | 6451 | 6457 | 6463 | 6469 | 6475 | 6481 | 6487 | 6493 | 6499 | 6504 | |
| 733 | 6510 | 6516 | 6522 | 6528 | 6534 | 6540 | 6546 | 6552 | 6558 | 6564 | |
| 734 | 6570 | 6576 | 6581 | 6587 | 6593 | 6599 | 6605 | 6611 | 6617 | 6623 | |
| 735 | 8 6629 | 6635 | 6641 | 6646 | 6652 | 6658 | 6664 | 6670 | 6676 | 6682 | |
| 736 | 6688 | 6694 | 6700 | 6705 | 6711 | 6717 | 6723 | 6729 | 6735 | 6741 | 5 |
| 737 | 6747 | 6753 | 6759 | 6764 | 6770 | 6776 | 6782 | 6788 | 6794 | 6800 | 1 0.5 |
| 738 | 6806 | 6812 | 6817 | 6823 | 6829 | 6835 | 6841 | 6847 | 6853 | 6859 | 2 1.0 |
| 739 | 6864 | 6870 | 6876 | 6882 | 6888 | 6894 | 6900 | 6906 | 6911 | 6917 | 3 1.5 |
| 740 | 8 6923 | 6929 | 6935 | 6941 | 6947 | 6953 | 6958 | 6964 | 6970 | 6976 | 4 2.0 |
| 741 | 6982 | 6988 | 6994 | 6999 | 7005 | 7011 | 7017 | 7023 | 7029 | 7035 | 5 2.5 |
| 742 | 7040 | 7046 | 7052 | 7058 | 7064 | 7070 | 7075 | 7081 | 7087 | 7093 | 6 3.0 |
| 743 | 7099 | 7105 | 7111 | 7116 | 7122 | 7128 | 7134 | 7140 | 7146 | 7151 | 7 3.5 |
| 744 | 7157 | 7163 | 7169 | 7175 | 7181 | 7186 | 7192 | 7198 | 7204 | 7210 | 8 4.0 |
| 745 | 8 7216 | 7221 | 7227 | 7233 | 7239 | 7245 | 7251 | 7256 | 7262 | 7268 | 9 4.5 |
| 746 | 7274 | 7280 | 7286 | 7291 | 7297 | 7303 | 7309 | 7315 | 7320 | 7326 | |
| 747 | 7332 | 7338 | 7344 | 7349 | 7355 | 7361 | 7367 | 7373 | 7379 | 7384 | |
| 748 | 7390 | 7396 | 7402 | 7408 | 7413 | 7419 | 7425 | 7431 | 7437 | 7442 | |
| 749 | 7448 | 7454 | 7460 | 7466 | 7471 | 7477 | 7483 | 7489 | 7495 | 7500 | |
| 750 | 8 7506 | 7512 | 7518 | 7523 | 7529 | 7535 | 7541 | 7547 | 7552 | 7558 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P. P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 750 | 8 7506 | 7512 | 7518 | 7523 | 7529 | 7535 | 7541 | 7547 | 7552 | 7558 | |
| 751 | 7564 | 7570 | 7576 | 7581 | 7587 | 7593 | 7599 | 7604 | 7610 | 7616 | |
| 752 | 7622 | 7628 | 7633 | 7639 | 7645 | 7651 | 7656 | 7662 | 7668 | 7674 | |
| 753 | 7679 | 7685 | 7691 | 7697 | 7703 | 7708 | 7714 | 7720 | 7726 | 7731 | |
| 754 | 7737 | 7743 | 7749 | 7754 | 7760 | 7766 | 7772 | 7777 | 7783 | 7789 | |
| 755 | 8 7795 | 7800 | 7806 | 7812 | 7818 | 7823 | 7829 | 7835 | 7841 | 7846 | |
| 756 | 7852 | 7858 | 7864 | 7869 | 7875 | 7881 | 7887 | 7892 | 7898 | 7904 | |
| 757 | 7910 | 7915 | 7921 | 7927 | 7933 | 7938 | 7944 | 7950 | 7955 | 7961 | |
| 758 | 7967 | 7973 | 7978 | 7984 | 7990 | 7996 | 8001 | 8007 | 8013 | 8018 | |
| 759 | 8024 | 8030 | 8036 | 8041 | 8047 | 8053 | 8058 | 8064 | 8070 | 8076 | |
| 760 | 8 8081 | 8087 | 8093 | 8098 | 8104 | 8110 | 8116 | 8121 | 8127 | 8133 | 6 |
| 761 | 8138 | 8144 | 8150 | 8156 | 8161 | 8167 | 8173 | 8178 | 8184 | 8190 | 1 \| 0.6 |
| 762 | 8195 | 8201 | 8207 | 8213 | 8218 | 8224 | 8230 | 8235 | 8241 | 8247 | 2 \| 1.2 |
| 763 | 8252 | 8258 | 8264 | 8270 | 8275 | 8281 | 8287 | 8292 | 8298 | 8304 | 3 \| 1.8 |
| 764 | 8309 | 8315 | 8321 | 8326 | 8332 | 8338 | 8343 | 8349 | 8355 | 8360 | 4 \| 2.4 |
| 765 | 8 8366 | 8372 | 8377 | 8383 | 8389 | 8395 | 8400 | 8406 | 8412 | 8417 | 5 \| 3.0 |
| 766 | 8423 | 8429 | 8434 | 8440 | 8446 | 8451 | 8457 | 8463 | 8468 | 8474 | 6 \| 3.6 |
| 767 | 8480 | 8485 | 8491 | 8497 | 8502 | 8508 | 8513 | 8519 | 8525 | 8530 | 7 \| 4.2 |
| 768 | 8536 | 8542 | 8547 | 8553 | 8559 | 8564 | 8570 | 8576 | 8581 | 8587 | 8 \| 4.8 |
| 769 | 8593 | 8598 | 8604 | 8610 | 8615 | 8621 | 8627 | 8632 | 8638 | 8643 | 9 \| 5.4 |
| 770 | 8 8649 | 8655 | 8660 | 8666 | 8672 | 8677 | 8683 | 8689 | 8694 | 8700 | |
| 771 | 8705 | 8711 | 8717 | 8722 | 8728 | 8734 | 8739 | 8745 | 8750 | 8756 | |
| 772 | 8762 | 8767 | 8773 | 8779 | 8784 | 8790 | 8795 | 8801 | 8807 | 8812 | |
| 773 | 8818 | 8824 | 8829 | 8835 | 8840 | 8846 | 8852 | 8857 | 8863 | 8868 | |
| 774 | 8874 | 8880 | 8885 | 8891 | 8897 | 8902 | 8908 | 8913 | 8919 | 8925 | |
| 775 | 8 8930 | 8936 | 8941 | 8947 | 8953 | 8958 | 8964 | 8969 | 8975 | 8981 | |
| 776 | 8986 | 8992 | 8997 | 9003 | 9009 | 9014 | 9020 | 9025 | 9031 | 9037 | |
| 777 | 9042 | 9048 | 9053 | 9059 | 9064 | 9070 | 9076 | 9081 | 9087 | 9092 | |
| 778 | 9098 | 9104 | 9109 | 9115 | 9120 | 9126 | 9131 | 9137 | 9143 | 9148 | |
| 779 | 9154 | 9159 | 9165 | 9170 | 9176 | 9182 | 9187 | 9193 | 9198 | 9204 | |
| 780 | 8 9209 | 9215 | 9221 | 9226 | 9232 | 9237 | 9243 | 9248 | 9254 | 9260 | 5 |
| 781 | 9265 | 9271 | 9276 | 9282 | 9287 | 9293 | 9298 | 9304 | 9310 | 9315 | 1 \| 0.5 |
| 782 | 9321 | 9326 | 9332 | 9337 | 9343 | 9348 | 9354 | 9360 | 9365 | 9371 | 2 \| 1.0 |
| 783 | 9376 | 9382 | 9387 | 9393 | 9398 | 9404 | 9409 | 9415 | 9421 | 9426 | 3 \| 1.5 |
| 784 | 9432 | 9437 | 9443 | 9448 | 9454 | 9459 | 9465 | 9470 | 9476 | 9481 | 4 \| 2.0 |
| 785 | 8 9487 | 9492 | 9498 | 9504 | 9509 | 9515 | 9520 | 9526 | 9531 | 9537 | 5 \| 2.5 |
| 786 | 9542 | 9548 | 9553 | 9559 | 9564 | 9570 | 9575 | 9581 | 9586 | 9592 | 6 \| 3.0 |
| 787 | 9597 | 9603 | 9609 | 9614 | 9620 | 9625 | 9631 | 9636 | 9642 | 9647 | 7 \| 3.5 |
| 788 | 9653 | 9658 | 9664 | 9669 | 9675 | 9680 | 9686 | 9691 | 9697 | 9702 | 8 \| 4.0 |
| 789 | 9708 | 9713 | 9719 | 9724 | 9730 | 9735 | 9741 | 9746 | 9752 | 9757 | 9 \| 4.5 |
| 790 | 8 9763 | 9768 | 9774 | 9779 | 9785 | 9790 | 9796 | 9801 | 9807 | 9812 | |
| 791 | 9818 | 9823 | 9829 | 9834 | 9840 | 9845 | 9851 | 9856 | 9862 | 9867 | |
| 792 | 9873 | 9878 | 9883 | 9889 | 9894 | 9900 | 9905 | 9911 | 9916 | 9922 | |
| 793 | 9927 | 9933 | 9938 | 9944 | 9949 | 9955 | 9960 | 9966 | 9971 | 9977 | |
| 794 | 8 9982 | 9988 | 9993 | 9998 | $\bar{0}004$ | $\bar{0}009$ | $\bar{0}015$ | $\bar{0}020$ | $\bar{0}026$ | $\bar{0}031$ | |
| 795 | 9 0037 | 0042 | 0048 | 0053 | 0059 | 0064 | 0069 | 0075 | 0080 | 0086 | |
| 796 | 0091 | 0097 | 0102 | 0108 | 0113 | 0119 | 0124 | 0129 | 0135 | 0140 | |
| 797 | 0146 | 0151 | 0157 | 0162 | 0168 | 0173 | 0179 | 0184 | 0189 | 0195 | |
| 798 | 0200 | 0206 | 0211 | 0217 | 0222 | 0227 | 0233 | 0238 | 0244 | 0249 | |
| 799 | 0255 | 0260 | 0266 | 0271 | 0276 | 0282 | 0287 | 0293 | 0298 | 0304 | |
| 800 | 9 0309 | 0314 | 0320 | 0325 | 0331 | 0336 | 0342 | 0347 | 0352 | 0358 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P. P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | 9 0309 | 0314 | 0320 | 0325 | 0331 | 0336 | 0342 | 0347 | 0352 | 0358 | |
| 801 | 0363 | 0369 | 0374 | 0380 | 0385 | 0390 | 0396 | 0401 | 0407 | 0412 | |
| 802 | 0417 | 0423 | 0428 | 0434 | 0439 | 0445 | 0450 | 0455 | 0461 | 0466 | |
| 803 | 0472 | 0477 | 0482 | 0488 | 0493 | 0499 | 0504 | 0509 | 0515 | 0520 | |
| 804 | 0526 | 0531 | 0536 | 0542 | 0547 | 0553 | 0558 | 0563 | 0569 | 0574 | |
| 805 | 9 0580 | 0585 | 0590 | 0596 | 0601 | 0607 | 0612 | 0617 | 0623 | 0628 | |
| 806 | 0634 | 0639 | 0644 | 0650 | 0655 | 0660 | 0666 | 0671 | 0677 | 0682 | |
| 807 | 0687 | 0693 | 0698 | 0703 | 0709 | 0714 | 0720 | 0725 | 0730 | 0736 | |
| 808 | 0741 | 0747 | 0752 | 0757 | 0763 | 0768 | 0773 | 0779 | 0784 | 0789 | |
| 809 | 0795 | 0800 | 0806 | 0811 | 0816 | 0822 | 0827 | 0832 | 0838 | 0843 | |
| 810 | 9 0849 | 0854 | 0859 | 0865 | 0870 | 0875 | 0881 | 0886 | 0891 | 0897 | |
| 811 | 0902 | 0907 | 0913 | 0918 | 0924 | 0929 | 0934 | 0940 | 0945 | 0950 | 6 |
| 812 | 0956 | 0961 | 0966 | 0972 | 0977 | 0982 | 0988 | 0993 | 0998 | 1004 | 1 0.6 |
| 813 | 1009 | 1014 | 1020 | 1025 | 1030 | 1036 | 1041 | 1046 | 1052 | 1057 | 2 1.2 |
| 814 | 1062 | 1068 | 1073 | 1078 | 1084 | 1089 | 1094 | 1100 | 1105 | 1110 | 3 1.8 |
| 815 | 9 1116 | 1121 | 1126 | 1132 | 1137 | 1142 | 1148 | 1153 | 1158 | 1164 | 4 2.4 |
| 816 | 1169 | 1174 | 1180 | 1185 | 1190 | 1196 | 1201 | 1206 | 1212 | 1217 | 5 3.0<br>6 3.6 |
| 817 | 1222 | 1228 | 1233 | 1238 | 1243 | 1249 | 1254 | 1259 | 1265 | 1270 | 7 4.2 |
| 818 | 1275 | 1281 | 1286 | 1291 | 1297 | 1302 | 1307 | 1312 | 1318 | 1323 | 8 4.8 |
| 819 | 1328 | 1334 | 1339 | 1344 | 1350 | 1355 | 1360 | 1365 | 1371 | 1376 | 9 5.4 |
| 820 | 9 1381 | 1387 | 1392 | 1397 | 1403 | 1408 | 1413 | 1418 | 1424 | 1429 | |
| 821 | 1434 | 1440 | 1445 | 1450 | 1455 | 1461 | 1466 | 1471 | 1477 | 1482 | |
| 822 | 1487 | 1492 | 1498 | 1503 | 1508 | 1514 | 1519 | 1524 | 1529 | 1535 | |
| 823 | 1540 | 1545 | 1551 | 1556 | 1561 | 1566 | 1572 | 1577 | 1582 | 1587 | |
| 824 | 1593 | 1598 | 1603 | 1609 | 1614 | 1619 | 1624 | 1630 | 1635 | 1640 | |
| 825 | 9 1645 | 1651 | 1656 | 1661 | 1666 | 1672 | 1677 | 1682 | 1687 | 1693 | |
| 826 | 1698 | 1703 | 1709 | 1714 | 1719 | 1724 | 1730 | 1735 | 1740 | 1745 | |
| 827 | 1751 | 1756 | 1761 | 1766 | 1772 | 1777 | 1782 | 1787 | 1793 | 1798 | |
| 828 | 1803 | 1808 | 1814 | 1819 | 1824 | 1829 | 1834 | 1840 | 1845 | 1850 | |
| 829 | 1855 | 1861 | 1866 | 1871 | 1876 | 1882 | 1887 | 1892 | 1897 | 1903 | |
| 830 | 9 1908 | 1913 | 1918 | 1924 | 1929 | 1934 | 1939 | 1944 | 1950 | 1955 | |
| 831 | 1960 | 1965 | 1971 | 1976 | 1981 | 1986 | 1991 | 1997 | 2002 | 2007 | 5 |
| 832 | 2012 | 2018 | 2023 | 2028 | 2033 | 2038 | 2044 | 2049 | 2054 | 2059 | 1 0.5 |
| 833 | 2065 | 2070 | 2075 | 2080 | 2085 | 2091 | 2096 | 2101 | 2106 | 2111 | 2 1.0 |
| 834 | 2117 | 2122 | 2127 | 2132 | 2137 | 2143 | 2148 | 2153 | 2158 | 2163 | 3 1.5 |
| 835 | 9 2169 | 2174 | 2179 | 2184 | 2189 | 2195 | 2200 | 2205 | 2210 | 2215 | 4 2.0 |
| 836 | 2221 | 2226 | 2231 | 2236 | 2241 | 2247 | 2252 | 2257 | 2262 | 2267 | 5 2.5<br>6 3.0 |
| 837 | 2273 | 2278 | 2283 | 2288 | 2293 | 2298 | 2304 | 2309 | 2314 | 2319 | 7 3.5 |
| 838 | 2324 | 2330 | 2335 | 2340 | 2345 | 2350 | 2355 | 2361 | 2366 | 2371 | 8 4.0 |
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| 840 | 9 2428 | 2433 | 2438 | 2443 | 2449 | 2454 | 2459 | 2464 | 2469 | 2474 | |
| 841 | 2480 | 2485 | 2490 | 2495 | 2500 | 2505 | 2511 | 2516 | 2521 | 2526 | |
| 842 | 2531 | 2536 | 2542 | 2547 | 2552 | 2557 | 2562 | 2567 | 2572 | 2578 | |
| 843 | 2583 | 2588 | 2593 | 2598 | 2603 | 2609 | 2614 | 2619 | 2624 | 2629 | |
| 844 | 2634 | 2639 | 2645 | 2650 | 2655 | 2660 | 2665 | 2670 | 2675 | 2681 | |
| 845 | 9 2686 | 2691 | 2696 | 2701 | 2706 | 2711 | 2716 | 2722 | 2727 | 2732 | |
| 846 | 2737 | 2742 | 2747 | 2752 | 2758 | 2763 | 2768 | 2773 | 2778 | 2783 | |
| 847 | 2788 | 2793 | 2799 | 2804 | 2809 | 2814 | 2819 | 2824 | 2829 | 2834 | |
| 848 | 2840 | 2845 | 2850 | 2855 | 2860 | 2865 | 2870 | 2875 | 2881 | 2886 | |
| 849 | 2891 | 2896 | 2901 | 2906 | 2911 | 2916 | 2921 | 2927 | 2932 | 2937 | |
| 850 | 9 2942 | 2947 | 2952 | 2957 | 2962 | 2967 | 2973 | 2978 | 2983 | 2988 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 850 | 9 2942 | 2947 | 2952 | 2957 | 2962 | 2967 | 2973 | 2978 | 2983 | 2988 | |
| 851 | 2993 | 2998 | 3003 | 3008 | 3013 | 3018 | 3024 | 3029 | 3034 | 3039 | |
| 852 | 3044 | 3049 | 3054 | 3059 | 3064 | 3069 | 3075 | 3080 | 3085 | 3090 | |
| 853 | 3095 | 3100 | 3105 | 3110 | 3115 | 3120 | 3125 | 3131 | 3136 | 3141 | |
| 854 | 3146 | 3151 | 3156 | 3161 | 3166 | 3171 | 3176 | 3181 | 3186 | 3192 | |
| 855 | 9 3197 | 3202 | 3207 | 3212 | 3217 | 3222 | 3227 | 3232 | 3237 | 3242 | |
| 856 | 3247 | 3252 | 3258 | 3263 | 3268 | 3273 | 3278 | 3283 | 3288 | 3293 | |
| 857 | 3298 | 3303 | 3308 | 3313 | 3318 | 3323 | 3328 | 3334 | 3339 | 3344 | 6 |
| 858 | 3349 | 3354 | 3359 | 3364 | 3369 | 3374 | 3379 | 3384 | 3389 | 3394 | 1 0.6 |
| 859 | 3399 | 3404 | 3409 | 3414 | 3420 | 3425 | 3430 | 3435 | 3440 | 3445 | 2 1.2 |
| 860 | 9 3450 | 3455 | 3460 | 3465 | 3470 | 3475 | 3480 | 3485 | 3490 | 3495 | 3 1.8 |
| 861 | 3500 | 3505 | 3510 | 3515 | 3520 | 3526 | 3531 | 3536 | 3541 | 3546 | 4 2.4 |
| 862 | 3551 | 3556 | 3561 | 3566 | 3571 | 3576 | 3581 | 3586 | 3591 | 3596 | 5 3.0 |
| 863 | 3601 | 3606 | 3611 | 3616 | 3621 | 3626 | 3631 | 3636 | 3641 | 3646 | 6 3.6 |
| 864 | 3651 | 3656 | 3661 | 3666 | 3671 | 3676 | 3682 | 3687 | 3692 | 3697 | 7 4.2 |
| 865 | 9 3702 | 3707 | 3712 | 3717 | 3722 | 3727 | 3732 | 3737 | 3742 | 3747 | 8 4.8 |
| 866 | 3752 | 3757 | 3762 | 3767 | 3772 | 3777 | 3782 | 3787 | 3792 | 3797 | 9 5.4 |
| 867 | 3802 | 3807 | 3812 | 3817 | 3822 | 3827 | 3832 | 3837 | 3842 | 3847 | |
| 868 | 3852 | 3857 | 3862 | 3867 | 3872 | 3877 | 3882 | 3887 | 3892 | 3897 | |
| 869 | 3902 | 3907 | 3912 | 3917 | 3922 | 3927 | 3932 | 3937 | 3942 | 3947 | |
| 870 | 9 3952 | 3957 | 3962 | 3967 | 3972 | 3977 | 3982 | 3987 | 3992 | 3997 | |
| 871 | 4002 | 4007 | 4012 | 4017 | 4022 | 4027 | 4032 | 4037 | 4042 | 4047 | 5 |
| 872 | 4052 | 4057 | 4062 | 4067 | 4072 | 4077 | 4082 | 4086 | 4091 | 4096 | 1 0.5 |
| 873 | 4101 | 4106 | 4111 | 4116 | 4121 | 4126 | 4131 | 4136 | 4141 | 4146 | 2 1.0 |
| 874 | 4151 | 4156 | 4161 | 4166 | 4171 | 4176 | 4181 | 4186 | 4191 | 4196 | 3 1.5 |
| 875 | 9 4201 | 4206 | 4211 | 4216 | 4221 | 4226 | 4231 | 4236 | 4240 | 4245 | 4 2.0 |
| 876 | 4250 | 4255 | 4260 | 4265 | 4270 | 4275 | 4280 | 4285 | 4290 | 4295 | 5 2.5 |
| 877 | 4300 | 4305 | 4310 | 4315 | 4320 | 4325 | 4330 | 4335 | 4340 | 4345 | 6 3.0 |
| 878 | 4349 | 4354 | 4359 | 4364 | 4369 | 4374 | 4379 | 4384 | 4389 | 4394 | 7 3.5 |
| 879 | 4399 | 4404 | 4409 | 4414 | 4419 | 4424 | 4429 | 4433 | 4438 | 4443 | 8 4.0 |
| 880 | 9 4448 | 4453 | 4458 | 4463 | 4468 | 4473 | 4478 | 4483 | 4488 | 4493 | 9 4.5 |
| 881 | 4498 | 4503 | 4507 | 4512 | 4517 | 4522 | 4527 | 4532 | 4537 | 4542 | |
| 882 | 4547 | 4552 | 4557 | 4562 | 4567 | 4571 | 4576 | 4581 | 4586 | 4591 | |
| 883 | 4596 | 4601 | 4606 | 4611 | 4616 | 4621 | 4626 | 4630 | 4635 | 4640 | |
| 884 | 4645 | 4650 | 4655 | 4660 | 4665 | 4670 | 4675 | 4680 | 4685 | 4689 | |
| 885 | 9 4694 | 4699 | 4704 | 4709 | 4714 | 4719 | 4724 | 4729 | 4734 | 4738 | |
| 886 | 4743 | 4748 | 4753 | 4758 | 4763 | 4768 | 4773 | 4778 | 4783 | 4787 | 4 |
| 887 | 4792 | 4797 | 4802 | 4807 | 4812 | 4817 | 4822 | 4827 | 4832 | 4836 | 1 0.4 |
| 888 | 4841 | 4846 | 4851 | 4856 | 4861 | 4866 | 4871 | 4876 | 4880 | 4885 | 2 0.8 |
| 889 | 4890 | 4895 | 4900 | 4905 | 4910 | 4915 | 4919 | 4924 | 4929 | 4934 | 3 1.2 |
| 890 | 9 4939 | 4944 | 4949 | 4954 | 4959 | 4963 | 4968 | 4973 | 4978 | 4983 | 4 1.6 |
| 891 | 4988 | 4993 | 4998 | 5002 | 5007 | 5012 | 5017 | 5022 | 5027 | 5032 | 5 2.0 |
| 892 | 5036 | 5041 | 5046 | 5051 | 5056 | 5061 | 5066 | 5071 | 5075 | 5080 | 6 2.4 |
| 893 | 5085 | 5090 | 5095 | 5100 | 5105 | 5109 | 5114 | 5119 | 5124 | 5129 | 7 2.8 |
| 894 | 5134 | 5139 | 5143 | 5148 | 5153 | 5158 | 5163 | 5168 | 5173 | 5177 | 8 3.2 |
| 895 | 9 5182 | 5187 | 5192 | 5197 | 5202 | 5207 | 5211 | 5216 | 5221 | 5226 | 9 3.6 |
| 896 | 5231 | 5236 | 5240 | 5245 | 5250 | 5255 | 5260 | 5265 | 5270 | 5274 | |
| 897 | 5279 | 5284 | 5289 | 5294 | 5299 | 5303 | 5308 | 5313 | 5318 | 5323 | |
| 898 | 5328 | 5332 | 5337 | 5342 | 5347 | 5352 | 5357 | 5361 | 5366 | 5371 | |
| 899 | 5376 | 5381 | 5386 | 5390 | 5395 | 5400 | 5405 | 5410 | 5415 | 5419 | |
| 900 | 9 5424 | 5429 | 5434 | 5439 | 5444 | 5448 | 5453 | 5458 | 5463 | 5468 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 900 | 9 5424 | 5429 | 5434 | 5439 | 5444 | 5448 | 5453 | 5458 | 5463 | 5468 | |
| 901 | 5472 | 5477 | 5482 | 5487 | 5492 | 5497 | 5501 | 5506 | 5511 | 5516 | |
| 902 | 5521 | 5525 | 5530 | 5535 | 5540 | 5545 | 5550 | 5554 | 5559 | 5564 | |
| 903 | 5569 | 5574 | 5578 | 5583 | 5588 | 5593 | 5598 | 5602 | 5607 | 5612 | |
| 904 | 5617 | 5622 | 5626 | 5631 | 5636 | 5641 | 5646 | 5650 | 5655 | 5660 | |
| 905 | 9 5665 | 5670 | 5674 | 5679 | 5684 | 5689 | 5694 | 5698 | 5703 | 5708 | |
| 906 | 5713 | 5718 | 5722 | 5727 | 5732 | 5737 | 5742 | 5746 | 5751 | 5756 | |
| 907 | 5761 | 5766 | 5770 | 5775 | 5780 | 5785 | 5789 | 5794 | 5799 | 5804 | |
| 908 | 5809 | 5813 | 5818 | 5823 | 5828 | 5832 | 5837 | 5842 | 5847 | 5852 | |
| 909 | 5856 | 5861 | 5866 | 5871 | 5875 | 5880 | 5885 | 5890 | 5895 | 5899 | |
| 910 | 9 5904 | 5909 | 5914 | 5918 | 5923 | 5928 | 5933 | 5938 | 5942 | 5947 | |
| 911 | 5952 | 5957 | 5961 | 5966 | 5971 | 5976 | 5980 | 5985 | 5990 | 5995 | 5 |
| 912 | 5999 | 6004 | 6009 | 6014 | 6019 | 6023 | 6028 | 6033 | 6038 | 6042 | 1 0.5 |
| 913 | 6047 | 6052 | 6057 | 6061 | 6066 | 6071 | 6076 | 6080 | 6085 | 6090 | 2 1.0 |
| 914 | 6095 | 6099 | 6104 | 6109 | 6114 | 6118 | 6123 | 6128 | 6133 | 6137 | 3 1.5 |
| 915 | 9 6142 | 6147 | 6152 | 6156 | 6161 | 6166 | 6171 | 6175 | 6180 | 6185 | 4 2.0 |
| 916 | 6190 | 6194 | 6199 | 6204 | 6209 | 6213 | 6218 | 6223 | 6227 | 6232 | 5 2.5<br>6 3.0 |
| 917 | 6237 | 6242 | 6246 | 6251 | 6256 | 6261 | 6265 | 6270 | 6275 | 6280 | 7 3.5 |
| 918 | 6284 | 6289 | 6294 | 6298 | 6303 | 6308 | 6313 | 6317 | 6322 | 6327 | 8 4.0 |
| 919 | 6332 | 6336 | 6341 | 6346 | 6350 | 6355 | 6360 | 6365 | 6369 | 6374 | 9 4.5 |
| 920 | 9 6379 | 6384 | 6388 | 6393 | 6398 | 6402 | 6407 | 6412 | 6417 | 6421 | |
| 921 | 6426 | 6431 | 6435 | 6440 | 6445 | 6450 | 6454 | 6459 | 6464 | 6468 | |
| 922 | 6473 | 6478 | 6483 | 6487 | 6492 | 6497 | 6501 | 6506 | 6511 | 6515 | |
| 923 | 6520 | 6525 | 6530 | 6534 | 6539 | 6544 | 6548 | 6553 | 6558 | 6562 | |
| 924 | 6567 | 6572 | 6577 | 6581 | 6586 | 6591 | 6595 | 6600 | 6605 | 6609 | |
| 925 | 9 6614 | 6619 | 6624 | 6628 | 6633 | 6638 | 6642 | 6647 | 6652 | 6656 | |
| 926 | 6661 | 6666 | 6670 | 6675 | 6680 | 6685 | 6689 | 6694 | 6699 | 6703 | |
| 927 | 6708 | 6713 | 6717 | 6722 | 6727 | 6731 | 6736 | 6741 | 6745 | 6750 | |
| 928 | 6755 | 6759 | 6764 | 6769 | 6774 | 6778 | 6783 | 6788 | 6792 | 6797 | |
| 929 | 6802 | 6806 | 6811 | 6816 | 6820 | 6825 | 6830 | 6834 | 6839 | 6844 | |
| 930 | 9 6848 | 6853 | 6858 | 6862 | 6867 | 6872 | 6876 | 6881 | 6886 | 6890 | |
| 931 | 6895 | 6900 | 6904 | 6909 | 6914 | 6918 | 6923 | 6928 | 6932 | 6937 | 4 |
| 932 | 6942 | 6946 | 6951 | 6956 | 6960 | 6965 | 6970 | 6974 | 6979 | 6984 | 1 0.4 |
| 933 | 6988 | 6993 | 6997 | 7002 | 7007 | 7011 | 7016 | 7021 | 7025 | 7030 | 2 0.8 |
| 934 | 7035 | 7039 | 7044 | 7049 | 7053 | 7058 | 7063 | 7067 | 7072 | 7077 | 3 1.2<br>4 1.6 |
| 935 | 9 7081 | 7086 | 7090 | 7095 | 7100 | 7104 | 7109 | 7114 | 7118 | 7123 | 5 2.0 |
| 936 | 7128 | 7132 | 7137 | 7142 | 7146 | 7151 | 7155 | 7160 | 7165 | 7169 | 6 2.4 |
| 937 | 7174 | 7179 | 7183 | 7188 | 7192 | 7197 | 7202 | 7206 | 7211 | 7216 | 7 2.8 |
| 938 | 7220 | 7225 | 7230 | 7234 | 7239 | 7243 | 7248 | 7253 | 7257 | 7262 | 8 3.2 |
| 939 | 7267 | 7271 | 7276 | 7280 | 7285 | 7290 | 7294 | 7299 | 7304 | 7308 | 9 3.6 |
| 940 | 9 7313 | 7317 | 7322 | 7327 | 7331 | 7336 | 7340 | 7345 | 7350 | 7354 | |
| 941 | 7359 | 7364 | 7368 | 7373 | 7377 | 7382 | 7387 | 7391 | 7396 | 7400 | |
| 942 | 7405 | 7410 | 7414 | 7419 | 7424 | 7428 | 7433 | 7437 | 7442 | 7447 | |
| 943 | 7451 | 7456 | 7460 | 7465 | 7470 | 7474 | 7479 | 7483 | 7488 | 7493 | |
| 944 | 7497 | 7502 | 7506 | 7511 | 7516 | 7520 | 7525 | 7529 | 7534 | 7539 | |
| 945 | 9 7543 | 7548 | 7552 | 7557 | 7562 | 7566 | 7571 | 7575 | 7580 | 7585 | |
| 946 | 7589 | 7594 | 7598 | 7603 | 7607 | 7612 | 7617 | 7621 | 7626 | 7630 | |
| 947 | 7635 | 7640 | 7644 | 7649 | 7653 | 7658 | 7663 | 7667 | 7672 | 7676 | |
| 948 | 7681 | 7685 | 7690 | 7695 | 7699 | 7704 | 7708 | 7713 | 7717 | 7722 | |
| 949 | 7727 | 7731 | 7736 | 7740 | 7745 | 7749 | 7754 | 7759 | 7763 | 7768 | |
| 950 | 9 7772 | 7777 | 7782 | 7786 | 7791 | 7795 | 7800 | 7804 | 7809 | 7813 | |
| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | P.P. |

| N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | PP. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 950 | 9 7772 | 7777 | 7782 | 7786 | 7791 | 7795 | 7800 | 7804 | 7809 | 7813 | |
| 951 | 7818 | 7823 | 7827 | 7832 | 7836 | 7841 | 7845 | 7850 | 7855 | 7859 | |
| 952 | 7864 | 7868 | 7873 | 7877 | 7882 | 7886 | 7891 | 7896 | 7900 | 7905 | |
| 953 | 7909 | 7914 | 7918 | 7923 | 7928 | 7932 | 7937 | 7941 | 7946 | 7950 | |
| 954 | 7955 | 7959 | 7964 | 7968 | 7973 | 7978 | 7982 | 7987 | 7991 | 7996 | |
| 955 | 9 8000 | 8005 | 8009 | 8014 | 8019 | 8023 | 8028 | 8032 | 8037 | 8041 | |
| 956 | 8046 | 8050 | 8055 | 8059 | 8064 | 8068 | 8073 | 8078 | 8082 | 8087 | |
| 957 | 8091 | 8096 | 8100 | 8105 | 8109 | 8114 | 8118 | 8123 | 8127 | 8132 | |
| 958 | 8137 | 8141 | 8146 | 8150 | 8155 | 8159 | 8164 | 8168 | 8173 | 8177 | |
| 959 | 8182 | 8186 | 8191 | 8195 | 8200 | 8204 | 8209 | 8214 | 8218 | 8223 | |
| 960 | 9 8227 | 8232 | 8236 | 8241 | 8245 | 8250 | 8254 | 8259 | 8263 | 8268 | |
| 961 | 8272 | 8277 | 8281 | 8286 | 8290 | 8295 | 8299 | 8304 | 8308 | 8313 | 5 |
| 962 | 8318 | 8322 | 8327 | 8331 | 8336 | 8340 | 8345 | 8349 | 8354 | 8358 | 1 0.5 |
| 963 | 8363 | 8367 | 8372 | 8376 | 8381 | 8385 | 8390 | 8394 | 8399 | 8403 | 2 1.0 |
| 964 | 8408 | 8412 | 8417 | 8421 | 8426 | 8430 | 8435 | 8439 | 8444 | 8448 | 3 1.5 |
| 965 | 9 8453 | 8457 | 8462 | 8466 | 8471 | 8475 | 8480 | 8484 | 8489 | 8493 | 4 2.0 |
| 966 | 8498 | 8502 | 8507 | 8511 | 8516 | 8520 | 8525 | 8529 | 8534 | 8538 | 5 2.5<br>6 3.0 |
| 967 | 8543 | 8547 | 8552 | 8556 | 8561 | 8565 | 8570 | 8574 | 8579 | 8583 | 7 3.5 |
| 968 | 8588 | 8592 | 8597 | 8601 | 8605 | 8610 | 8614 | 8619 | 8623 | 8628 | 8 4.0 |
| 969 | 8632 | 8637 | 8641 | 8646 | 8650 | 8655 | 8659 | 8664 | 8668 | 8673 | 9 4.5 |
| 970 | 9 8677 | 8682 | 8686 | 8691 | 8695 | 8700 | 8704 | 8709 | 8713 | 8717 | |
| 971 | 8722 | 8726 | 8731 | 8735 | 8740 | 8744 | 8749 | 8753 | 8758 | 8762 | |
| 972 | 8767 | 8771 | 8776 | 8780 | 8784 | 8789 | 8793 | 8798 | 8802 | 8807 | |
| 973 | 8811 | 8816 | 8820 | 8825 | 8829 | 8834 | 8838 | 8843 | 8847 | 8851 | |
| 974 | 8856 | 8860 | 8865 | 8869 | 8874 | 8878 | 8883 | 8887 | 8892 | 8896 | |
| 975 | 9 8900 | 8905 | 8909 | 8914 | 8918 | 8923 | 8927 | 8932 | 8936 | 8941 | |
| 976 | 8945 | 8949 | 8954 | 8958 | 8963 | 8967 | 8972 | 8976 | 8981 | 8985 | |
| 977 | 8989 | 8994 | 8998 | 9003 | 9007 | 9012 | 9016 | 9021 | 9025 | 9029 | |
| 978 | 9034 | 9038 | 9043 | 9047 | 9052 | 9056 | 9061 | 9065 | 9069 | 9074 | |
| 979 | 9078 | 9083 | 9087 | 9092 | 9096 | 9100 | 9105 | 9109 | 9114 | 9118 | |
| 980 | 9 9123 | 9127 | 9131 | 9136 | 9140 | 9145 | 9149 | 9154 | 9158 | 9162 | |
| 981 | 9167 | 9171 | 9176 | 9180 | 9185 | 9189 | 9193 | 9198 | 9202 | 9207 | 4 |
| 982 | 9211 | 9216 | 9220 | 9224 | 9229 | 9233 | 9238 | 9242 | 9247 | 9251 | 1 0.4 |
| 983 | 9255 | 9260 | 9264 | 9269 | 9273 | 9277 | 9282 | 9286 | 9291 | 9295 | 2 0.8 |
| 984 | 9300 | 9304 | 9308 | 9313 | 9317 | 9322 | 9326 | 9330 | 9335 | 9339 | 3 1.2 |
| 985 | 9 9344 | 9348 | 9352 | 9357 | 9361 | 9366 | 9370 | 9374 | 9379 | 9383 | 4 1.6 |
| 986 | 9388 | 9392 | 9396 | 9401 | 9405 | 9410 | 9414 | 9419 | 9423 | 9427 | 5 2.0<br>6 2.4 |
| 987 | 9432 | 9436 | 9441 | 9445 | 9449 | 9454 | 9458 | 9463 | 9467 | 9471 | 7 2.8 |
| 988 | 9476 | 9480 | 9484 | 9489 | 9493 | 9498 | 9502 | 9506 | 9511 | 9515 | 8 3.2 |
| 989 | 9520 | 9524 | 9528 | 9533 | 9537 | 9542 | 9546 | 9550 | 9555 | 9559 | 9 3.6 |
| 990 | 9 9564 | 9568 | 9572 | 9577 | 9581 | 9585 | 9590 | 9594 | 9599 | 9603 | |
| 991 | 9607 | 9612 | 9616 | 9621 | 9625 | 9629 | 9634 | 9638 | 9642 | 9647 | |
| 992 | 9651 | 9656 | 9660 | 9664 | 9669 | 9673 | 9677 | 9682 | 9686 | 9691 | |
| 993 | 9695 | 9699 | 9704 | 9708 | 9712 | 9717 | 9721 | 9726 | 9730 | 9734 | |
| 994 | 9739 | 9743 | 9747 | 9752 | 9756 | 9760 | 9765 | 9769 | 9774 | 9778 | |
| 995 | 9 9782 | 9787 | 9791 | 9795 | 9800 | 9804 | 9808 | 9813 | 9817 | 9822 | |
| 996 | 9826 | 9830 | 9835 | 9839 | 9843 | 9848 | 9852 | 9856 | 9861 | 9865 | |
| 997 | 9870 | 9874 | 9878 | 9883 | 9887 | 9891 | 9896 | 9900 | 9904 | 9909 | |
| 998 | 9913 | 9917 | 9922 | 9926 | 9930 | 9935 | 9939 | 9944 | 9948 | 9952 | |
| 999 | 9957 | 9961 | 9965 | 9970 | 9974 | 9978 | 9983 | 9987 | 9991 | 9996 | |
| 1000 | 0 0000 | 0004 | 0009 | 0013 | 0017 | 0022 | 0026 | 0030 | 0035 | 0039 | |

N. | L. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | PP.

# Verwandlung der natürlichen Logarithmen in gemeine und umgekehrt.

Log. vulg. = M. Log. nat.

Log. nat. = $\frac{1}{M}$. Log. vulg.

| Vielfache von M. | | | | Vielfache von $\frac{1}{M}$. | | | |
|---|---|---|---|---|---|---|---|
| 0 | 0.000000 | 50 | 21.714724 | 0 | 0.00000 | 50 | 115.12925 |
| 1 | 0.434294 | 51 | 22.149019 | 1 | 2.30259 | 51 | 117.43184 |
| 2 | 0.868589 | 52 | 583313 | 2 | 4.60517 | 52 | 119.73442 |
| 3 | 1.302883 | 53 | 23.017608 | 3 | 6.90776 | 53 | 122.03701 |
| 4 | 1.737178 | 54 | 451902 | 4 | 9.21034 | 54 | 124.33960 |
| 5 | 2.171472 | 55 | 886197 | 5 | 11.51293 | 55 | 126.64218 |
| 6 | 2.605767 | 56 | 24.320491 | 6 | 13.81551 | 56 | 128.94477 |
| 7 | 3.040061 | 57 | 754785 | 7 | 16.11810 | 57 | 131.24735 |
| 8 | 3.474356 | 58 | 25.189080 | 8 | 18.42068 | 58 | 133.54994 |
| 9 | 3.908650 | 59 | 623374 | 9 | 20.72327 | 59 | 135.85252 |
| 10 | 4.342945 | 60 | 26.057669 | 10 | 23.02585 | 60 | 138.15511 |
| 11 | 4.777239 | 61 | 491963 | 11 | 25.32844 | 61 | 140.45769 |
| 12 | 5.211534 | 62 | 926258 | 12 | 27.63102 | 62 | 142.76028 |
| 13 | 5.645828 | 63 | 27.360552 | 13 | 29.93361 | 63 | 145.06286 |
| 14 | 6.080123 | 64 | 794847 | 14 | 32.23619 | 64 | 147.36545 |
| 15 | 6.514417 | 65 | 28.229141 | 15 | 34.53878 | 65 | 149.66803 |
| 16 | 6.948712 | 66 | 663436 | 16 | 36.84136 | 66 | 151.97062 |
| 17 | 7.383006 | 67 | 29.097730 | 17 | 39.14395 | 67 | 154.27320 |
| 18 | 7.817301 | 68 | 532025 | 18 | 41.44653 | 68 | 156.57579 |
| 19 | 8.251595 | 69 | 966319 | 19 | 43.74912 | 69 | 158.87837 |
| 20 | 8.685890 | 70 | 30.400614 | 20 | 46.05170 | 70 | 161.18096 |
| 21 | 9.120184 | 71 | 834908 | 21 | 48.35429 | 71 | 163.48354 |
| 22 | 9.554479 | 72 | 31.269203 | 22 | 50.65687 | 72 | 165.78613 |
| 23 | 9.988773 | 73 | 703497 | 23 | 52.95946 | 73 | 168.08871 |
| 24 | 10.423068 | 74 | 32.137792 | 24 | 55.26204 | 74 | 170.39130 |
| 25 | 10.857362 | 75 | 572086 | 25 | 57.56463 | 75 | 172.69388 |
| 26 | 11.291657 | 76 | 33.006381 | 26 | 59.86721 | 76 | 174.99647 |
| 27 | 11.725951 | 77 | 440675 | 27 | 62.16980 | 77 | 177.29905 |
| 28 | 12.160245 | 78 | 874970 | 28 | 64.47238 | 78 | 179.60164 |
| 29 | 12.594540 | 79 | 34.309264 | 29 | 66.77497 | 79 | 181.90422 |
| 30 | 13.028834 | 80 | 743559 | 30 | 69.07755 | 80 | 184.20681 |
| 31 | 13.463129 | 81 | 35.177853 | 31 | 71.38014 | 81 | 186.50939 |
| 32 | 13.897423 | 82 | 612148 | 32 | 73.68272 | 82 | 188.81198 |
| 33 | 14.331718 | 83 | 36.046442 | 33 | 75.98531 | 83 | 191.11456 |
| 34 | 14.766012 | 84 | 480736 | 34 | 78.28789 | 84 | 193.41715 |
| 35 | 15.200307 | 85 | 915031 | 35 | 80.59048 | 85 | 195.71973 |
| 36 | 15.634601 | 86 | 37.349325 | 36 | 82.89306 | 86 | 198.02232 |
| 37 | 16.068896 | 87 | 783620 | 37 | 85.19565 | 87 | 200.32490 |
| 38 | 16.503190 | 88 | 38.217914 | 38 | 87.49823 | 88 | 202.62749 |
| 39 | 16.937485 | 89 | 652209 | 39 | 89.80082 | 89 | 204.93007 |
| 40 | 17.371779 | 90 | 39.086503 | 40 | 92.10340 | 90 | 207.23266 |
| 41 | 17.806074 | 91 | 520798 | 41 | 94.40599 | 91 | 209.53524 |
| 42 | 18.240368 | 92 | 955092 | 42 | 96.70857 | 92 | 211.83783 |
| 43 | 18.674663 | 93 | 40.389387 | 43 | 99.01116 | 93 | 214.14041 |
| 44 | 19.108957 | 94 | 823681 | 44 | 101.31374 | 94 | 216.44300 |
| 45 | 19.543252 | 95 | 41.257976 | 45 | 103.61633 | 95 | 218.74558 |
| 46 | 19.977546 | 96 | 692270 | 46 | 105.91891 | 96 | 221.04817 |
| 47 | 20.411841 | 97 | 42.126565 | 47 | 108.22150 | 97 | 223.35075 |
| 48 | 20.846135 | 98 | 560859 | 48 | 110.52408 | 98 | 225.65334 |
| 49 | 21.280430 | 99 | 995154 | 49 | 112.82667 | 99 | 227.95592 |
| 50 | 21.714724 | 100 | 43.429448 | 50 | 115.12925 | 100 | 230.25851 |

DIE

# LOGARITHMEN

DER

## TRIGONOMETRISCHEN FUNCTIONEN

FÜR

JEDES HUNDERTEL

DES GRADES DES

## QUADRANTEN.

0°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | P. P. |
|---|---|---|---|---|---|---|---|---|
| 00 | – | | – | | – | | 100 | |
| 01 | 6.24188 | 30103 | 6.24188 | 30103 | 3.75812 | 0.00000 | 99 | |
| 02 | 6.54291 | 17609 | 6.54291 | 17609 | 3.45709 | 0.00000 | 98 | |
| 03 | 6.71900 | 12494 | 6.71900 | 12494 | 3.28100 | 0.00000 | 97 | |
| 04 | 6.84394 | 9691 | 6.84394 | 9691 | 3.15606 | 0.00000 | 96 | |
| 05 | 6.94085 | 7918 | 6.94085 | 7918 | 3.05915 | 0.00000 | 95 | |
| 06 | 7.02003 | 6695 | 7.02003 | 6695 | 2.97997 | 0.00000 | 94 | |
| 07 | 7.08698 | 5799 | 7.08698 | 5799 | 2.91302 | 0.00000 | 93 | |
| 08 | 7.14497 | 5115 | 7.14497 | 5115 | 2.85503 | 0.00000 | 92 | |
| 09 | 7.19612 | 4576 | 7.19612 | 4576 | 2.80388 | 0.00000 | 91 | |
| 10 | 7.24188 | 4139 | 7.24188 | 4139 | 2.75812 | 0.00000 | 90 | |
| 11 | 7.28327 | 3779 | 7.28327 | 3779 | 2.71673 | 0.00000 | 89 | |
| 12 | 7.32106 | 3476 | 7.32106 | 3476 | 2.67894 | 0.00000 | 88 | |
| 13 | 7.35582 | 3218 | 7.35582 | 3219 | 2.64418 | 0.00000 | 87 | |
| 14 | 7.38800 | 2997 | 7.38801 | 2996 | 2.61199 | 0.00000 | 86 | |
| 15 | 7.41797 | 2803 | 7.41797 | 2803 | 2.58203 | 0.00000 | 85 | |
| 16 | 7.44600 | 2633 | 7.44600 | 2633 | 2.55400 | 0.00000 | 84 | |
| 17 | 7.47233 | 2482 | 7.47233 | 2482 | 2.52767 | 0.00000 | 83 | |
| 18 | 7.49715 | 2348 | 7.49715 | 2348 | 2.50285 | 0.00000 | 82 | |
| 19 | 7.52063 | 2228 | 7.52063 | 2228 | 2.47937 | 0.00000 | 81 | |
| 20 | 7.54291 | 2119 | 7.54291 | 2119 | 2.45709 | 0.00000 | 80 | |
| 21 | 7.56410 | 2020 | 7.56410 | 2020 | 2.43590 | 0.00000 | 79 | |
| 22 | 7.58430 | 1930 | 7.58430 | 1931 | 2.41570 | 0.00000 | 78 | |
| 23 | 7.60360 | 1849 | 7.60361 | 1848 | 2.39639 | 0.00000 | 77 | |
| 24 | 7.62209 | 1773 | 7.62209 | 1773 | 2.37791 | 0.00000 | 76 | |
| 25 | 7.63982 | 1703 | 7.63982 | 1703 | 2.36018 | 0.00000 | 75 | |
| 26 | 7.65685 | 1639 | 7.65685 | 1639 | 2.34315 | 0.00000 | 74 | |
| 27 | 7.67324 | 1579 | 7.67324 | 1580 | 2.32676 | 0.00000 | 73 | |
| 28 | 7.68903 | 1524 | 7.68904 | 1524 | 2.31096 | 9.99999 | 72 | |
| 29 | 7.70427 | 1473 | 7.70428 | 1472 | 2.29572 | 9.99999 | 71 | |
| 30 | 7.71900 | 1424 | 7.71900 | 1424 | 2.28100 | 9.99999 | 70 | |
| 31 | 7.73324 | 1379 | 7.73324 | 1379 | 2.26676 | 9.99999 | 69 | |
| 32 | 7.74703 | 1336 | 7.74703 | 1337 | 2.25297 | 9.99999 | 68 | |
| 33 | 7.76039 | 1296 | 7.76040 | 1296 | 2.23960 | 9.99999 | 67 | |
| 34 | 7.77335 | 1259 | 7.77336 | 1259 | 2.22664 | 9.99999 | 66 | |
| 35 | 7.78594 | 1224 | 7.78595 | 1224 | 2.21405 | 9.99999 | 65 | |
| 36 | 7.79818 | 1190 | 7.79819 | 1190 | 2.20181 | 9.99999 | 64 | |
| 37 | 7.81008 | 1158 | 7.81009 | 1158 | 2.18991 | 9.99999 | 63 | |
| 38 | 7.82166 | 1128 | 7.82167 | 1128 | 2.17833 | 9.99999 | 62 | |
| 39 | 7.83294 | 1099 | 7.83295 | 1099 | 2.16705 | 9.99999 | 61 | |
| 40 | 7.84393 | 1073 | 7.84394 | 1073 | 2.15606 | 9.99999 | 60 | |
| 41 | 7.85466 | 1046 | 7.85467 | 1046 | 2.14533 | 9.99999 | 59 | |
| 42 | 7.86512 | 1022 | 7.86513 | 1022 | 2.13487 | 9.99999 | 58 | |
| 43 | 7.87534 | 999 | 7.87535 | 999 | 2.12465 | 9.99999 | 57 | |
| 44 | 7.88533 | 976 | 7.88534 | 976 | 2.11466 | 9.99999 | 56 | |
| 45 | 7.89509 | 954 | 7.89510 | 954 | 2.10490 | 9.99999 | 55 | |
| 46 | 7.90463 | 934 | 7.90464 | 934 | 2.09536 | 9.99999 | 54 | |
| 47 | 7.91397 | 914 | 7.91398 | 915 | 2.08602 | 9.99999 | 53 | |
| 48 | 7.92311 | 896 | 7.92313 | 895 | 2.07687 | 9.99998 | 52 | |
| 49 | 7.93207 | 877 | 7.93208 | 878 | 2.06792 | 9.99998 | 51 | |
| 50 | 7.94084 | | 7.94086 | | 2.05914 | 9.99998 | 50 | |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | | P. P. |

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| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | P. P. |
|---|---|---|---|---|---|---|---|---|
| 50 | 7.94084 | 860 | 7.94086 | 860 | 2.05914 | 9.99998 | 50 | |
| 51 | 7.94944 | 843 | 7.94946 | 843 | 2.05054 | 9.99998 | 49 | |
| 52 | 7.95787 | 828 | 7.95789 | 828 | 2.04211 | 9.99998 | 48 | |
| 53 | 7.96615 | 811 | 7.96617 | 811 | 2.03383 | 9.99998 | 47 | |
| 54 | 7.97426 | 797 | 7.97428 | 797 | 2.02572 | 9.99998 | 46 | |
| 55 | 7.98223 | 783 | 7.98225 | 783 | 2.01775 | 9.99998 | 45 | |
| 56 | 7.99006 | 769 | 7.99008 | 769 | 2.00992 | 9.99998 | 44 | |
| 57 | 7.99775 | 755 | 7.99777 | 755 | 2.00223 | 9.99998 | 43 | |
| 58 | 8.00530 | 742 | 8.00532 | 742 | 1.99468 | 9.99998 | 42 | |
| 59 | 8.01272 | 730 | 8.01274 | 730 | 1.98726 | 9.99998 | 41 | |
| 60 | 8.02002 | 718 | 8.02004 | 718 | 1.97996 | 9.99998 | 40 | |
| 61 | 8.02720 | 706 | 8.02722 | 707 | 1.97278 | 9.99998 | 39 | |
| 62 | 8.03426 | 695 | 8.03429 | 695 | 1.96571 | 9.99997 | 38 | |
| 63 | 8.04121 | 684 | 8.04124 | 684 | 1.95876 | 9.99997 | 37 | |
| 64 | 8.04805 | 673 | 8.04808 | 673 | 1.95192 | 9.99997 | 36 | |
| 65 | 8.05478 | 663 | 8.05481 | 663 | 1.94519 | 9.99997 | 35 | |
| 66 | 8.06141 | 653 | 8.06144 | 653 | 1.93856 | 9.99997 | 34 | |
| 67 | 8.06794 | 644 | 8.06797 | 644 | 1.93203 | 9.99997 | 33 | |
| 68 | 8.07438 | 634 | 8.07441 | 634 | 1.92559 | 9.99997 | 32 | |
| 69 | 8.08072 | 624 | 8.08075 | 625 | 1.91925 | 9.99997 | 31 | |
| 70 | 8.08696 | 616 | 8.08700 | 616 | 1.91300 | 9.99997 | 30 | |
| 71 | 8.09312 | 608 | 8.09316 | 607 | 1.90684 | 9.99997 | 29 | |
| 72 | 8.09920 | 599 | 8.09923 | 599 | 1.90077 | 9.99997 | 28 | |
| 73 | 8.10519 | 591 | 8.10522 | 591 | 1.89478 | 9.99996 | 27 | |
| 74 | 8.11110 | 583 | 8.11113 | 583 | 1.88887 | 9.99996 | 26 | |
| 75 | 8.11693 | 575 | 8.11696 | 576 | 1.88304 | 9.99996 | 25 | |
| 76 | 8.12268 | 568 | 8.12272 | 567 | 1.87728 | 9.99996 | 24 | |
| 77 | 8.12836 | 560 | 8.12839 | 561 | 1.87161 | 9.99996 | 23 | |
| 78 | 8.13396 | 553 | 8.13400 | 553 | 1.86600 | 9.99996 | 22 | |
| 79 | 8.13949 | 546 | 8.13953 | 547 | 1.86047 | 9.99996 | 21 | |
| 80 | 8.14495 | 540 | 8.14500 | 539 | 1.85500 | 9.99996 | 20 | |
| 81 | 8.15035 | 533 | 8.15039 | 533 | 1.84961 | 9.99996 | 19 | |
| 82 | 8.15568 | 526 | 8.15572 | 527 | 1.84428 | 9.99996 | 18 | |
| 83 | 8.16094 | 520 | 8.16099 | 520 | 1.83901 | 9.99995 | 17 | |
| 84 | 8.16614 | 514 | 8.16619 | 514 | 1.83381 | 9.99995 | 16 | |
| 85 | 8.17128 | 508 | 8.17133 | 508 | 1.82867 | 9.99995 | 15 | |
| 86 | 8.17636 | 502 | 8.17641 | 502 | 1.82359 | 9.99995 | 14 | |
| 87 | 8.18138 | 496 | 8.18143 | 496 | 1.81857 | 9.99995 | 13 | |
| 88 | 8.18634 | 491 | 8.18639 | 491 | 1.81361 | 9.99995 | 12 | |
| 89 | 8.19125 | 485 | 8.19130 | 486 | 1.80870 | 9.99995 | 11 | |
| 90 | 8.19610 | 480 | 8.19616 | 480 | 1.80384 | 9.99995 | 10 | |
| 91 | 8.20090 | 475 | 8.20096 | 474 | 1.79904 | 9.99995 | 09 | |
| 92 | 8.20565 | 469 | 8.20570 | 470 | 1.79430 | 9.99994 | 08 | |
| 93 | 8.21034 | 465 | 8.21040 | 464 | 1.78960 | 9.99994 | 07 | |
| 94 | 8.21499 | 459 | 8.21504 | 460 | 1.78496 | 9.99994 | 06 | |
| 95 | 8.21958 | 455 | 8.21964 | 455 | 1.78036 | 9.99994 | 05 | |
| 96 | 8.22413 | 450 | 8.22419 | 450 | 1.77581 | 9.99994 | 04 | |
| 97 | 8.22863 | 445 | 8.22869 | 446 | 1.77131 | 9.99994 | 03 | |
| 98 | 8.23308 | 441 | 8.23315 | 441 | 1.76685 | 9.99994 | 02 | |
| 99 | 8.23749 | 437 | 8.23756 | 436 | 1.76244 | 9.99994 | 01 | |
| 100 | 8.24186 | | 8.24192 | | 1.75808 | 9.99993 | 00 | |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | | P. P. |

# 1°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | P. P. |
|---|---|---|---|---|---|---|---|---|
| 00 | 8.24186 | 432 | 8.24192 | 432 | 1.75808 | 9.99993 | 100 | |
| 01 | 8.24618 | 427 | 8.24624 | 428 | 1.75376 | 9.99993 | 99 | |
| 02 | 8.25045 | 424 | 8.25052 | 424 | 1.74948 | 9.99993 | 98 | |
| 03 | 8.25469 | 420 | 8.25476 | 420 | 1.74524 | 9.99993 | 97 | |
| 04 | 8.25889 | 415 | 8.25896 | 416 | 1.74104 | 9.99993 | 96 | |
| 05 | 8.26304 | 412 | 8.26312 | 411 | 1.73688 | 9.99993 | 95 | |
| 06 | 8.26716 | 408 | 8.26723 | 408 | 1.73277 | 9.99993 | 94 | |
| 07 | 8.27124 | 404 | 8.27131 | 404 | 1.72869 | 9.99992 | 93 | |
| 08 | 8.27528 | 400 | 8.27535 | 401 | 1.72465 | 9.99992 | 92 | |
| 09 | 8.27928 | 396 | 8.27936 | 396 | 1.72064 | 9.99992 | 91 | |
| 10 | 8.28324 | 393 | 8.28332 | 393 | 7.71668 | 9.99992 | 90 | |
| 11 | 8.28717 | 390 | 8.28725 | 390 | 1.71275 | 9.99992 | 89 | |
| 12 | 8.29107 | 386 | 8.29115 | 386 | 1.70885 | 9.99992 | 88 | |
| 13 | 8.29493 | 382 | 8.29501 | 383 | 1.70499 | 9.99992 | 87 | |
| 14 | 8.29875 | 380 | 8.29884 | 379 | 1.70116 | 9.99991 | 86 | |
| 15 | 8.30255 | 376 | 8.30263 | 376 | 1.69737 | 9.99991 | 85 | |
| 16 | 8.30631 | 372 | 8.30639 | 373 | 1.69361 | 9.99991 | 84 | |
| 17 | 8.31003 | 370 | 8.31012 | 370 | 1.68988 | 9.99991 | 83 | |
| 18 | 8.31373 | 366 | 8.31382 | 367 | 1.68618 | 9.99991 | 82 | |
| 19 | 8.31739 | 364 | 8.31749 | 363 | 1.68251 | 9.99991 | 81 | |
| 20 | 8.32103 | 360 | 8.32112 | 361 | 1.67888 | 9.99990 | 80 | |
| 21 | 8.32463 | 357 | 8.32473 | 357 | 1.67527 | 9.99990 | 79 | |
| 22 | 8.32820 | 355 | 8.32830 | 355 | 1.67170 | 9.99990 | 78 | |
| 23 | 8.33175 | 352 | 8.33185 | 352 | 1.66815 | 9.99990 | 77 | |
| 24 | 8.33527 | 348 | 8.33537 | 349 | 1.66463 | 9.99990 | 76 | |
| 25 | 8.33875 | 346 | 8.33886 | 346 | 1.66114 | 9.99990 | 75 | |
| 26 | 8.34221 | 344 | 8.34232 | 343 | 1.65768 | 9.99989 | 74 | |
| 27 | 8.34565 | 340 | 8.34575 | 341 | 1.65425 | 9.99989 | 73 | |
| 28 | 8.34905 | 338 | 8.34916 | 338 | 1.65084 | 9.99989 | 72 | |
| 29 | 8.35243 | 335 | 8.35254 | 336 | 1.64746 | 9.99989 | 71 | |
| 30 | 8.35578 | 333 | 8.35590 | 332 | 1.64410 | 9.99989 | 70 | |
| 31 | 8.35911 | 330 | 8.35922 | 331 | 1.64078 | 9.99989 | 69 | |
| 32 | 8.36241 | 328 | 8.36253 | 328 | 1.63747 | 9.99988 | 68 | |
| 33 | 8.36569 | 325 | 8.36581 | 325 | 1.63419 | 9.99988 | 67 | |
| 34 | 8.36894 | 323 | 8.36906 | 323 | 1.63094 | 9.99988 | 66 | |
| 35 | 8.37217 | 321 | 8.37229 | 321 | 1.62771 | 9.99988 | 65 | |
| 36 | 8.37538 | 318 | 8.37550 | 318 | 1.62450 | 9.99988 | 64 | |
| 37 | 8.37856 | 315 | 8.37868 | 316 | 1.62132 | 9.99988 | 63 | |
| 38 | 8.38171 | 314 | 8.38184 | 314 | 1.61816 | 9.99987 | 62 | |
| 39 | 8.38485 | 311 | 8.38498 | 311 | 1.61502 | 9.99987 | 61 | |
| 40 | 8.38796 | 309 | 8.38809 | 309 | 1.61191 | 9.99987 | 60 | |
| 41 | 8.39105 | 307 | 8.39118 | 307 | 1.60882 | 9.99987 | 59 | |
| 42 | 8.39412 | 305 | 8.39425 | 305 | 1.60575 | 9.99987 | 58 | |
| 43 | 8.39717 | 302 | 8.39730 | 303 | 1.60270 | 9.99986 | 57 | |
| 44 | 8.40019 | 301 | 8.40033 | 301 | 1.59967 | 9.99986 | 56 | |
| 45 | 8.40320 | 298 | 8.40334 | 298 | 1.59666 | 9.99986 | 55 | |
| 46 | 8.40618 | 297 | 8.40632 | 297 | 1.59368 | 9.99986 | 54 | |
| 47 | 8.40915 | 294 | 8.40929 | 295 | 1.59071 | 9.99986 | 53 | |
| 48 | 8.41209 | 292 | 8.41224 | 292 | 1.58776 | 9.99986 | 52 | |
| 49 | 8.41501 | 291 | 8.41516 | 291 | 1.58484 | 9.99985 | 51 | |
| 50 | 8.41792 | | 8.41807 | | 1.58193 | 9.99985 | 50 | |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | | P. P. |

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| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | P. P. |
|---|---|---|---|---|---|---|---|---|
| 50 | 8.41792 | 288 | 8.41807 | 288 | 1.58193 | 9.99985 | 50 | |
| 51 | 8.42080 | 287 | 8.42095 | 287 | 1.57905 | 9.99985 | 49 | |
| 52 | 8.42367 | 285 | 8.42382 | 285 | 1.57618 | 9.99985 | 48 | |
| 53 | 8.42652 | 283 | 8.42667 | 283 | 1.57333 | 9.99985 | 47 | |
| 54 | 8.42935 | 281 | 8.42950 | 282 | 1.57050 | 9.99984 | 46 | |
| 55 | 8.43216 | 279 | 8.43232 | 279 | 1.56768 | 9.99984 | 45 | |
| 56 | 8.43495 | 277 | 8.43511 | 278 | 1.56489 | 9.99984 | 44 | |
| 57 | 8.43772 | 276 | 8.43789 | 275 | 1.56211 | 9.99984 | 43 | |
| 58 | 8.44048 | 274 | 8.44064 | 275 | 1.55936 | 9.99983 | 42 | |
| 59 | 8.44322 | 272 | 8.44339 | 272 | 1.55661 | 9.99983 | 41 | |
| 60 | 8.44594 | 271 | 8.44611 | 271 | 1.55389 | 9.99983 | 40 | |
| 61 | 8.44865 | 268 | 8.44882 | 269 | 1.55118 | 9.99983 | 39 | |
| 62 | 8.45133 | 268 | 8.45151 | 267 | 1.54849 | 9.99983 | 38 | |
| 63 | 8.45401 | 265 | 8.45418 | 266 | 1.54582 | 9.99982 | 37 | |
| 64 | 8.45666 | 264 | 8.45684 | 264 | 1.54316 | 9.99982 | 36 | |
| 65 | 8.45930 | 262 | 8.45948 | 263 | 1.54052 | 9.99982 | 35 | |
| 66 | 8.46192 | 261 | 8.46211 | 261 | 1.53789 | 9.99982 | 34 | |
| 67 | 8.46453 | 259 | 8.46472 | 259 | 1.53528 | 9.99982 | 33 | |
| 68 | 8.46712 | 258 | 8.46731 | 258 | 1.53269 | 9.99981 | 32 | |
| 69 | 8.46970 | 256 | 8.46989 | 256 | 1.53011 | 9.99981 | 31 | |
| 70 | 8.47226 | 255 | 8.47245 | 255 | 1.52755 | 9.99981 | 30 | |
| 71 | 8.47481 | 253 | 8.47500 | 254 | 1.52500 | 9.99981 | 29 | |
| 72 | 8.47734 | 252 | 8.47754 | 252 | 1.52246 | 9.99980 | 28 | |
| 73 | 8.47986 | 250 | 8.48006 | 250 | 1.51994 | 9.99980 | 27 | |
| 74 | 8.48236 | 249 | 8.48256 | 249 | 1.51744 | 9.99980 | 26 | |
| 75 | 8.48485 | 247 | 8.48505 | 248 | 1.51495 | 9.99980 | 25 | |
| 76 | 8.48732 | 246 | 8.48753 | 246 | 1.51247 | 9.99980 | 24 | |
| 77 | 8.48978 | 245 | 8.48999 | 245 | 1.51001 | 9.99979 | 23 | |
| 78 | 8.49223 | 243 | 8.49244 | 243 | 1.50756 | 9.99979 | 22 | |
| 79 | 8.49466 | 242 | 8.49487 | 242 | 1.50513 | 9.99979 | 21 | |
| 80 | 8.49708 | 240 | 8.49729 | 241 | 1.50271 | 9.99979 | 20 | |
| 81 | 8.49948 | 240 | 8.49970 | 239 | 1.50030 | 9.99978 | 19 | |
| 82 | 8.50188 | 237 | 8.50209 | 239 | 1.49791 | 9.99978 | 18 | |
| 83 | 8.50425 | 237 | 8.50448 | 236 | 1.49552 | 9.99978 | 17 | |
| 84 | 8.50662 | 235 | 8.50684 | 236 | 1.49316 | 9.99978 | 16 | |
| 85 | 8.50897 | 234 | 8.50920 | 234 | 1.49080 | 9.99977 | 15 | |
| 86 | 8.51131 | 233 | 8.51154 | 233 | 1.48846 | 9.99977 | 14 | |
| 87 | 8.51364 | 232 | 8.51387 | 232 | 1.48613 | 9.99977 | 13 | |
| 88 | 8.51596 | 230 | 8.51619 | 231 | 1.48381 | 9.99977 | 12 | |
| 89 | 8.51826 | 229 | 8.51850 | 229 | 1.48150 | 9.99976 | 11 | |
| 90 | 8.52055 | 228 | 8.52079 | 228 | 1.47921 | 9.99976 | 10 | |
| 91 | 8.52283 | 227 | 8.52307 | 227 | 1.47693 | 9.99976 | 09 | |
| 92 | 8.52510 | 225 | 8.52534 | 226 | 1.47466 | 9.99976 | 08 | |
| 93 | 8.52735 | 225 | 8.52760 | 225 | 1.47240 | 9.99975 | 07 | |
| 94 | 8.52960 | 223 | 8.52985 | 223 | 1.47015 | 9.99975 | 06 | |
| 95 | 8.53183 | 222 | 8.53208 | 222 | 1.46792 | 9.99975 | 05 | |
| 96 | 8.53405 | 221 | 8.53430 | 221 | 1.46570 | 9.99975 | 04 | |
| 97 | 8.53626 | 220 | 8.53651 | 221 | 1.46349 | 9.99974 | 03 | |
| 98 | 8.53846 | 218 | 8.53872 | 219 | 1.46128 | 9.99974 | 02 | |
| 99 | 8.54064 | 218 | 8.54091 | 217 | 1.45909 | 9.99974 | 01 | |
| 100 | 8.54282 | | 8.54308 | | 1.45692 | 9.99974 | 00 | |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | | P. P. |

# 2°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | P. P. |
|---|---|---|---|---|---|---|---|---|
| 00 | 8.54282 | 216 | 8.54308 | 217 | 1.45692 | 9.99974 | 100 | |
| 01 | 8.54498 | 216 | 8.54525 | 216 | 1.45475 | 9.99973 | 99 | |
| 02 | 8.54714 | 214 | 8.54741 | 215 | 1.45259 | 9.99973 | 98 | |
| 03 | 8.54928 | 214 | 8.54956 | 213 | 1.45044 | 9.99973 | 97 | |
| 04 | 8.55142 | 212 | 8.55169 | 213 | 1.44831 | 9.99972 | 96 | |
| 05 | 8.55354 | 211 | 8.55382 | 211 | 1.44618 | 9.99972 | 95 | |
| 06 | 8.55565 | 210 | 8.55593 | 211 | 1.44407 | 9.99972 | 94 | |
| 07 | 8.55775 | 210 | 8.55804 | 209 | 1.44196 | 9.99972 | 93 | |
| 08 | 8.55985 | 208 | 8.56013 | 209 | 1.43987 | 9.99971 | 92 | |
| 09 | 8.56193 | 207 | 8.56222 | 207 | 1.43778 | 9.99971 | 91 | |
| 10 | 8.56400 | 206 | 8.56429 | 207 | 1.43571 | 9.99971 | 90 | |
| 11 | 8.56606 | 205 | 8.56636 | 205 | 1.43364 | 9.99971 | 89 | |
| 12 | 8.56811 | 205 | 8.56841 | 205 | 1.43159 | 9.99970 | 88 | |
| 13 | 8.57016 | 203 | 8.57046 | 203 | 1.42954 | 9.99970 | 87 | |
| 14 | 8.57219 | 202 | 8.57249 | 203 | 1.42751 | 9.99970 | 86 | |
| 15 | 8.57421 | 202 | 8.57452 | 202 | 1.42548 | 9.99969 | 85 | |
| 16 | 8.57623 | 200 | 8.57654 | 200 | 1.42346 | 9.99969 | 84 | |
| 17 | 8.57823 | 200 | 8.57854 | 200 | 1.42146 | 9.99969 | 83 | |
| 18 | 8.58023 | 199 | 8.58054 | 199 | 1.41946 | 9.99969 | 82 | |
| 19 | 8.58222 | 197 | 8.58253 | 198 | 1.41747 | 9.99968 | 81 | |
| 20 | 8.58419 | 197 | 8.58451 | 198 | 1.41549 | 9.99968 | 80 | |
| 21 | 8.58616 | 196 | 8.58649 | 196 | 1.41351 | 9.99968 | 79 | |
| 22 | 8.58812 | 195 | 8.58845 | 195 | 1.41155 | 9.99967 | 78 | |
| 23 | 8.59007 | 194 | 8.59040 | 195 | 1.40960 | 9.99967 | 77 | |
| 24 | 8.59201 | 194 | 8.59235 | 193 | 1.40765 | 9.99967 | 76 | |
| 25 | 8.59395 | 192 | 8.59428 | 193 | 1.40572 | 9.99967 | 75 | |
| 26 | 8.59587 | 192 | 8.59621 | 192 | 1.40379 | 9.99966 | 74 | |
| 27 | 8.59779 | 191 | 8.59813 | 191 | 1.40187 | 9.99966 | 73 | |
| 28 | 8.59970 | 190 | 8.60004 | 190 | 1.39996 | 9.99966 | 72 | |
| 29 | 8.60160 | 189 | 8.60194 | 190 | 1.39806 | 9.99965 | 71 | |
| 30 | 8.60349 | 188 | 8.60384 | 188 | 1.39616 | 9.99965 | 70 | |
| 31 | 8.60537 | 188 | 8.60572 | 188 | 1.39428 | 9.99965 | 69 | |
| 32 | 8.60725 | 186 | 8.60760 | 187 | 1.39240 | 9.99964 | 68 | |
| 33 | 8.60911 | 186 | 8.60947 | 186 | 1.39053 | 9.99964 | 67 | |
| 34 | 8.61097 | 185 | 8.61133 | 186 | 1.38867 | 9.99964 | 66 | |
| 35 | 8.61282 | 185 | 8.61319 | 185 | 1.38681 | 9.99963 | 65 | |
| 36 | 8.61467 | 183 | 8.61504 | 183 | 1.38496 | 9.99963 | 64 | |
| 37 | 8.61650 | 183 | 8.61687 | 183 | 1.38313 | 9.99963 | 63 | |
| 38 | 8.61833 | 182 | 8.61870 | 183 | 1.38130 | 9.99963 | 62 | |
| 39 | 8.62015 | 181 | 8.62053 | 181 | 1.37947 | 9.99962 | 61 | |
| 40 | 8.62196 | 181 | 8.62234 | 181 | 1.37766 | 9.99962 | 60 | |
| 41 | 8.62377 | 179 | 8.62415 | 180 | 1.37585 | 9.99962 | 59 | |
| 42 | 8.62556 | 179 | 8.62595 | 179 | 1.37405 | 9.99961 | 58 | |
| 43 | 8.62735 | 179 | 8.62774 | 179 | 1.37226 | 9.99961 | 57 | |
| 44 | 8.62914 | 177 | 8.62953 | 178 | 1.37047 | 9.99961 | 56 | |
| 45 | 8.63091 | 177 | 8.63131 | 177 | 1.36869 | 9.99960 | 55 | |
| 46 | 8.63268 | 176 | 8.63308 | 176 | 1.36692 | 9.99960 | 54 | |
| 47 | 8.63444 | 175 | 8.63484 | 176 | 1.36516 | 9.99960 | 53 | |
| 48 | 8.63619 | 175 | 8.63660 | 175 | 1.36340 | 9.99959 | 52 | |
| 49 | 8.63794 | 174 | 8.63835 | 174 | 1.36165 | 9.99959 | 51 | |
| 50 | 8.63968 | | 8.64009 | | 1.35991 | 9.99959 | 50 | |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | | P. P. |

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| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | P. P. |
|---|---|---|---|---|---|---|---|---|
| 50 | 8.63968 | 173 | 8.64009 | 174 | 1.35991 | 9.99959 | 50 | |
| 51 | 8.64141 | 173 | 8.64183 | 173 | 1.35817 | 9.99958 | 49 | |
| 52 | 8.64314 | 172 | 8.64356 | 172 | 1.35644 | 9.99958 | 48 | |
| 53 | 8.64486 | 171 | 8.64528 | 172 | 1.35472 | 9.99958 | 47 | |
| 54 | 8.64657 | 170 | 8.64700 | 170 | 1.35300 | 9.99957 | 46 | |
| 55 | 8.64827 | 170 | 8.64870 | 171 | 1.35130 | 9.99957 | 45 | |
| 56 | 8.64997 | 169 | 8.65041 | 169 | 1.34959 | 9.99957 | 44 | |
| 57 | 8.65166 | 169 | 8.65210 | 169 | 1.34790 | 9.99956 | 43 | |
| 58 | 8.65335 | 168 | 8.65379 | 168 | 1.34621 | 9.99956 | 42 | |
| 59 | 8.65503 | 167 | 8.65547 | 168 | 1.34453 | 9.99956 | 41 | |
| 60 | 8.65670 | 167 | 8.65715 | 167 | 1.34285 | 9.99955 | 40 | |
| 61 | 8.65837 | 166 | 8.65882 | 166 | 1.34118 | 9.99955 | 39 | |
| 62 | 8.66003 | 165 | 8.66048 | 166 | 1.33952 | 9.99955 | 38 | |
| 63 | 8.66168 | 165 | 8.66214 | 165 | 1.33786 | 9.99954 | 37 | |
| 64 | 8.66333 | 164 | 8.66379 | 164 | 1.33621 | 9.99954 | 36 | |
| 65 | 8.66497 | 163 | 8.66543 | 164 | 1.33457 | 9.99954 | 35 | |
| 66 | 8.66660 | 163 | 8.66707 | 163 | 1.33293 | 9.99953 | 34 | |
| 67 | 8.66823 | 162 | 8.66870 | 163 | 1.33130 | 9.99953 | 33 | |
| 68 | 8.66985 | 162 | 8.67033 | 162 | 1.32967 | 9.99952 | 32 | |
| 69 | 8.67147 | 161 | 8.67195 | 161 | 1.32805 | 9.99952 | 31 | |
| 70 | 8.67308 | 160 | 8.67356 | 161 | 1.32644 | 9.99952 | 30 | |
| 71 | 8.67468 | 160 | 8.67517 | 160 | 1.32483 | 9.99951 | 29 | |
| 72 | 8.67628 | 160 | 8.67677 | 160 | 1.32323 | 9.99951 | 28 | |
| 73 | 8.67788 | 158 | 8.67837 | 159 | 1.32163 | 9.99951 | 27 | |
| 74 | 8.67946 | 158 | 8.67996 | 158 | 1.32004 | 9.99950 | 26 | |
| 75 | 8.68104 | 158 | 8.68154 | 158 | 1.31846 | 9.99950 | 25 | |
| 76 | 8.68262 | 157 | 8.68312 | 158 | 1.31688 | 9.99950 | 24 | |
| 77 | 8.68419 | 156 | 8.68470 | 156 | 1.31530 | 9.99949 | 23 | |
| 78 | 8.68575 | 156 | 8.68626 | 157 | 1.31374 | 9.99949 | 22 | |
| 79 | 8.68731 | 155 | 8.68783 | 155 | 1.31217 | 9.99948 | 21 | |
| 80 | 8.68886 | 155 | 8.68938 | 155 | 1.31062 | 9.99948 | 20 | |
| 81 | 8.69041 | 154 | 8.69093 | 155 | 1.30907 | 9.99948 | 19 | |
| 82 | 8.69195 | 154 | 8.69248 | 154 | 1.30752 | 9.99947 | 18 | |
| 83 | 8.69349 | 153 | 8.69402 | 153 | 1.30598 | 9.99947 | 17 | |
| 84 | 8.69502 | 152 | 8.69555 | 153 | 1.30445 | 9.99947 | 16 | |
| 85 | 8.69654 | 152 | 8.69708 | 152 | 1.30292 | 9.99946 | 15 | |
| 86 | 8.69806 | 152 | 8.69860 | 152 | 1.30140 | 9.99946 | 14 | |
| 87 | 8.69958 | 151 | 8.70012 | 152 | 1.29988 | 9.99945 | 13 | |
| 88 | 8.70109 | 150 | 8.70164 | 150 | 1.29836 | 9.99945 | 12 | |
| 89 | 8.70259 | 150 | 8.70314 | 151 | 1.29686 | 9.99945 | 11 | |
| 90 | 8.70409 | 149 | 8.70465 | 149 | 1.29535 | 9.99944 | 10 | |
| 91 | 8.70558 | 149 | 8.70614 | 150 | 1.29386 | 9.99944 | 09 | |
| 92 | 8.70707 | 149 | 8.70764 | 148 | 1.29236 | 9.99944 | 08 | |
| 93 | 8.70856 | 147 | 8.70912 | 149 | 1.29088 | 9.99943 | 07 | |
| 94 | 8.71003 | 148 | 8.71061 | 147 | 1.28939 | 9.99943 | 06 | |
| 95 | 8.71151 | 147 | 8.71208 | 148 | 1.28792 | 9.99942 | 05 | |
| 96 | 8.71298 | 146 | 8.71356 | 146 | 1.28644 | 9.99942 | 04 | |
| 97 | 8.71444 | 146 | 8.71502 | 147 | 1.28498 | 9.99942 | 03 | |
| 98 | 8.71590 | 145 | 8.71649 | 145 | 1.28351 | 9.99941 | 02 | |
| 99 | 8.71735 | 145 | 8.71794 | 146 | 1.28206 | 9.99941 | 01 | |
| 100 | 8.71880 | | 8.71940 | | 1.28060 | 9.99940 | 00 | |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | | P. P. |

| | Sin. | d. | Tang. | d c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 8.71880 | 144 | 8.71940 | 144 | 1.28060 | 9.99940 | 100 |
| 01 | 8.72024 | 144 | 8.72084 | 145 | 1.27916 | 9.99940 | 99 |
| 02 | 8.72168 | 144 | 8.72229 | 144 | 1.27771 | 9.99940 | 98 |
| 03 | 8.72312 | 143 | 8.72373 | 143 | 1.27627 | 9.99939 | 97 |
| 04 | 8.72455 | 142 | 8.72516 | 143 | 1.27484 | 9.99939 | 96 |
| 05 | 8.72597 | 142 | 8.72659 | 142 | 1.27341 | 9.99938 | 95 |
| 06 | 8.72739 | 142 | 8.72801 | 142 | 1.27199 | 9.99938 | 94 |
| 07 | 8.72881 | 141 | 8.72943 | 142 | 1.27057 | 9.99938 | 93 |
| 08 | 8.73022 | 141 | 8.73085 | 141 | 1.26915 | 9.99937 | 92 |
| 09 | 8.73163 | 140 | 8.73226 | 140 | 1.26774 | 9.99937 | 91 |
| 10 | 8.73303 | 139 | 8.73366 | 140 | 1.26634 | 9.99936 | 90 |
| 11 | 8.73442 | 140 | 8.73506 | 140 | 1.26494 | 9.99936 | 89 |
| 12 | 8.73582 | 139 | 8.73646 | 139 | 1.26354 | 9.99936 | 88 |
| 13 | 8.73721 | 138 | 8.73785 | 139 | 1.26215 | 9.99935 | 87 |
| 14 | 8.73859 | 138 | 8.73924 | 139 | 1.26076 | 9.99935 | 86 |
| 15 | 8.73997 | 137 | 8.74063 | 138 | 1.25937 | 9.99934 | 85 |
| 16 | 8.74134 | 138 | 8.74201 | 137 | 1.25799 | 9.99934 | 84 |
| 17 | 8.74272 | 136 | 8.74338 | 137 | 1.25662 | 9.99933 | 83 |
| 18 | 8.74408 | 136 | 8.74475 | 137 | 1.25525 | 9.99933 | 82 |
| 19 | 8.74544 | 136 | 8.74612 | 136 | 1.25388 | 9.99933 | 81 |
| 20 | 8.74680 | 136 | 8.74748 | 136 | 1.25252 | 9.99932 | 80 |
| 21 | 8.74816 | 134 | 8.74884 | 135 | 1.25116 | 9.99932 | 79 |
| 22 | 8.74950 | 135 | 8.75019 | 135 | 1.24981 | 9.99931 | 78 |
| 23 | 8.75085 | 134 | 8.75154 | 135 | 1.24846 | 9.99931 | 77 |
| 24 | 8.75219 | 134 | 8.75289 | 134 | 1.24711 | 9.99931 | 76 |
| 25 | 8.75353 | 133 | 8.75423 | 133 | 1.24577 | 9.99930 | 75 |
| 26 | 8.75486 | 133 | 8.75556 | 134 | 1.24444 | 9.99930 | 74 |
| 27 | 8.75619 | 132 | 8.75690 | 133 | 1.24310 | 9.99929 | 73 |
| 28 | 8.75751 | 132 | 8.75823 | 132 | 1.24177 | 9.99929 | 72 |
| 29 | 8.75883 | 132 | 8.75955 | 132 | 1.24045 | 9.99928 | 71 |
| 30 | 8.76015 | 131 | 8.76087 | 132 | 1.23913 | 9.99928 | 70 |
| 31 | 8.76146 | 131 | 8.76219 | 131 | 1.23781 | 9.99927 | 69 |
| 32 | 8.76277 | 131 | 8.76350 | 131 | 1.23650 | 9.99927 | 68 |
| 33 | 8.76408 | 130 | 8.76481 | 131 | 1.23519 | 9.99927 | 67 |
| 34 | 8.76538 | 129 | 8.76612 | 130 | 1.23388 | 9.99926 | 66 |
| 35 | 8.76667 | 130 | 8.76742 | 129 | 1.23258 | 9.99926 | 65 |
| 36 | 8.76797 | 129 | 8.76871 | 130 | 1.23129 | 9.99925 | 64 |
| 37 | 8.76926 | 128 | 8.77001 | 129 | 1.22999 | 9.99925 | 63 |
| 38 | 8.77054 | 128 | 8.77130 | 128 | 1.22870 | 9.99924 | 62 |
| 39 | 8.77182 | 128 | 8.77258 | 129 | 1.22742 | 9.99924 | 61 |
| 40 | 8.77310 | 128 | 8.77387 | 127 | 1.22613 | 9.99923 | 60 |
| 41 | 8.77438 | 127 | 8.77514 | 128 | 1.22486 | 9.99923 | 59 |
| 42 | 8.77565 | 126 | 8.77642 | 127 | 1.22358 | 9.99923 | 58 |
| 43 | 8.77691 | 126 | 8.77769 | 127 | 1.22231 | 9.99922 | 57 |
| 44 | 8.77817 | 126 | 8.77896 | 126 | 1.22104 | 9.99922 | 56 |
| 45 | 8.77943 | 126 | 8.78022 | 126 | 1.21978 | 9.99921 | 55 |
| 46 | 8.78069 | 125 | 8.78148 | 126 | 1.21852 | 9.99921 | 54 |
| 47 | 8.78194 | 125 | 8.78274 | 125 | 1.21726 | 9.99920 | 53 |
| 48 | 8.78319 | 124 | 8.78399 | 125 | 1.21601 | 9.99920 | 52 |
| 49 | 8.78443 | 125 | 8.78524 | 125 | 1.21476 | 9.99919 | 51 |
| 50 | 8.78568 | | 8.78649 | | 1.21351 | 9.99919 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 145 | 143 |
|---|---|---|
| 1 | 14.5 | 14.3 |
| 2 | 29.0 | 28.6 |
| 3 | 43.5 | 42.9 |
| 4 | 58.0 | 57.2 |
| 5 | 72.5 | 71.5 |
| 6 | 87.0 | 85.8 |
| 7 | 101.5 | 100.1 |
| 8 | 116.0 | 114.4 |
| 9 | 130.5 | 128.7 |

| | 141 | 139 |
|---|---|---|
| 1 | 14.1 | 13.9 |
| 2 | 28.2 | 27.8 |
| 3 | 42.3 | 41.7 |
| 4 | 56.4 | 55.6 |
| 5 | 70.5 | 69.5 |
| 6 | 84.6 | 83.4 |
| 7 | 98.7 | 97.3 |
| 8 | 112.8 | 111.2 |
| 9 | 126.9 | 125.1 |

| | 138 | 137 |
|---|---|---|
| 1 | 13.8 | 13.7 |
| 2 | 27.6 | 27.4 |
| 3 | 41.4 | 41.1 |
| 4 | 55.2 | 54.8 |
| 5 | 69.0 | 68.5 |
| 6 | 82.8 | 82.2 |
| 7 | 96.6 | 95.9 |
| 8 | 110.4 | 109.6 |
| 9 | 124.2 | 123.3 |

| | 135 | 133 |
|---|---|---|
| 1 | 13.5 | 13.3 |
| 2 | 27.0 | 26.6 |
| 3 | 40.5 | 39.9 |
| 4 | 54.0 | 53.2 |
| 5 | 67.5 | 66.5 |
| 6 | 81.0 | 79.8 |
| 7 | 94.5 | 93.1 |
| 8 | 108.0 | 106.4 |
| 9 | 121.5 | 119.7 |

| | 131 | 129 |
|---|---|---|
| 1 | 13.1 | 12.9 |
| 2 | 26.2 | 25.8 |
| 3 | 39.3 | 38.7 |
| 4 | 52.4 | 51.6 |
| 5 | 65.5 | 64.5 |
| 6 | 78.6 | 77.4 |
| 7 | 91.7 | 90.3 |
| 8 | 104.8 | 103.2 |
| 9 | 117.9 | 116.1 |

| | 128 | 127 |
|---|---|---|
| 1 | 12.8 | 12.7 |
| 2 | 25.6 | 25.4 |
| 3 | 38.4 | 38.1 |
| 4 | 51.2 | 50.8 |
| 5 | 64.0 | 63.5 |
| 6 | 76.8 | 76.2 |
| 7 | 89.6 | 88.9 |
| 8 | 102.4 | 101.6 |
| 9 | 115.2 | 114.3 |

| | 125 | 124 |
|---|---|---|
| 1 | 12.5 | 12.4 |
| 2 | 25.0 | 24.8 |
| 3 | 37.5 | 37.2 |
| 4 | 50.0 | 49.6 |
| 5 | 62.5 | 62.0 |
| 6 | 75.0 | 74.4 |
| 7 | 87.5 | 86.8 |
| 8 | 100.0 | 99.2 |
| 9 | 112.5 | 111.6 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 8.78568 | 123 | 8.78649 | 124 | 1.21351 | 9.99919 | 50 |
| 51 | 8.78691 | 124 | 8.78773 | 124 | 1.21227 | 9.99918 | 49 |
| 52 | 8.78815 | 123 | 8.78897 | 123 | 1.21103 | 9.99918 | 48 |
| 53 | 8.78938 | 122 | 8.79020 | 123 | 1.20980 | 9.99918 | 47 |
| 54 | 8.79060 | 123 | 8.79143 | 123 | 1.20857 | 9.99917 | 46 |
| 55 | 8.79183 | 122 | 8.79266 | 123 | 1.20734 | 9.99917 | 45 |
| 56 | 8.79305 | 121 | 8.79389 | 122 | 1.20611 | 9.99916 | 44 |
| 57 | 8.79426 | 122 | 8.79511 | 122 | 1.20489 | 9.99916 | 43 |
| 58 | 8.79548 | 121 | 8.79633 | 121 | 1.20367 | 9.99915 | 42 |
| 59 | 8.79669 | 120 | 8.79754 | 121 | 1.20246 | 9.99915 | 41 |
| 60 | 8.79789 | 121 | 8.79875 | 121 | 1.20125 | 9.99914 | 40 |
| 61 | 8.79910 | 120 | 8.79996 | 120 | 1.20004 | 9.99914 | 39 |
| 62 | 8.80030 | 119 | 8.80116 | 121 | 1.19884 | 9.99913 | 38 |
| 63 | 8.80149 | 120 | 8.80237 | 119 | 1.19763 | 9.99913 | 37 |
| 64 | 8.80269 | 119 | 8.80356 | 120 | 1.19644 | 9.99912 | 36 |
| 65 | 8.80388 | 118 | 8.80476 | 119 | 1.19524 | 9.99912 | 35 |
| 66 | 8.80506 | 119 | 8.80595 | 119 | 1.19405 | 9.99911 | 34 |
| 67 | 8.80625 | 118 | 8.80714 | 118 | 1.19286 | 9.99911 | 33 |
| 68 | 8.80743 | 117 | 8.80832 | 118 | 1.19168 | 9.99910 | 32 |
| 69 | 8.80860 | 118 | 8.80950 | 118 | 1.19050 | 9.99910 | 31 |
| 70 | 8.80978 | 117 | 8.81068 | 118 | 1.18932 | 9.99909 | 30 |
| 71 | 8.81095 | 117 | 8.81186 | 117 | 1.18814 | 9.99909 | 29 |
| 72 | 8.81212 | 116 | 8.81303 | 117 | 1.18697 | 9.99908 | 28 |
| 73 | 8.81328 | 116 | 8.81420 | 117 | 1.18580 | 9.99908 | 27 |
| 74 | 8.81444 | 116 | 8.81537 | 116 | 1.18463 | 9.99907 | 26 |
| 75 | 8.81560 | 115 | 8.81653 | 116 | 1.18347 | 9.99907 | 25 |
| 76 | 8.81675 | 116 | 8.81769 | 116 | 1.18231 | 9.99906 | 24 |
| 77 | 8.81791 | 114 | 8.81885 | 115 | 1.18115 | 9.99906 | 23 |
| 78 | 8.81905 | 115 | 8.82000 | 115 | 1.18000 | 9.99905 | 22 |
| 79 | 8.82020 | 114 | 8.82115 | 115 | 1.17885 | 9.99905 | 21 |
| 80 | 8.82134 | 114 | 8.82230 | 114 | 1.17770 | 9.99904 | 20 |
| 81 | 8.82248 | 114 | 8.82344 | 114 | 1.17656 | 9.99904 | 19 |
| 82 | 8.82362 | 113 | 8.82458 | 114 | 1.17542 | 9.99903 | 18 |
| 83 | 8.82475 | 113 | 8.82572 | 114 | 1.17428 | 9.99903 | 17 |
| 84 | 8.82588 | 113 | 8.82686 | 113 | 1.17314 | 9.99902 | 16 |
| 85 | 8.82701 | 113 | 8.82799 | 113 | 1.17201 | 9.99902 | 15 |
| 86 | 8.82814 | 112 | 8.82912 | 113 | 1.17088 | 9.99901 | 14 |
| 87 | 8.82926 | 112 | 8.83025 | 112 | 1.16975 | 9.99901 | 13 |
| 88 | 8.83038 | 111 | 8.83137 | 112 | 1.16863 | 9.99900 | 12 |
| 89 | 8 83149 | 112 | 8.83249 | 112 | 1.16751 | 9.99900 | 11 |
| 90 | 8.83261 | 111 | 8.83361 | 112 | 1.16639 | 9.99899 | 10 |
| 91 | 8.83372 | 110 | 8.83473 | 111 | 1.16527 | 9.99899 | 09 |
| 92 | 8.83482 | 111 | 8.83584 | 111 | 1.16416 | 9.99898 | 08 |
| 93 | 8.83593 | 110 | 8.83695 | 111 | 1.16305 | 9.99898 | 07 |
| 94 | 8.83703 | 110 | 8.83806 | 110 | 1.16194 | 9.99897 | 06 |
| 95 | 8.83813 | 110 | 8.83916 | 110 | 1.16084 | 9.99897 | 05 |
| 96 | 8.83923 | 109 | 8.84026 | 110 | 1.15974 | 9.99896 | 04 |
| 97 | 8.84032 | 109 | 8.84136 | 110 | 1.15864 | 9.99896 | 03 |
| 98 | 8.84141 | 109 | 8.84246 | 109 | 1.15754 | 9.99895 | 02 |
| 99 | 8.84250 | 108 | 8.84355 | 109 | 1.15645 | 9.99895 | 01 |
| 100 | 8.84358 | | 8.84464 | | 1.15536 | 9.99894 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 123 | 122 | 121 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | 112 | 111 | 109 | 108 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12.3 | 12.2 | 12.1 | 11.9 | 11.8 | 11.7 | 11.6 | 11.5 | 11.4 | 11.3 | 11.2 | 11.1 | 10.9 | 10.8 |
| 2 | 24.6 | 24.4 | 24.2 | 23.8 | 23.6 | 23.4 | 23.2 | 23.0 | 22.8 | 22.6 | 22.4 | 22.2 | 21.8 | 21.6 |
| 3 | 36.9 | 36.6 | 36.3 | 35.7 | 35.4 | 35.1 | 34.8 | 34.5 | 34.2 | 33.9 | 33.6 | 33.3 | 32.7 | 32.4 |
| 4 | 49.2 | 48.8 | 48.4 | 47.6 | 47.2 | 46.8 | 46.4 | 46.0 | 45.6 | 45.2 | 44.8 | 44.4 | 43.6 | 43.2 |
| 5 | 61.5 | 61.0 | 60.5 | 59.5 | 59.0 | 58.5 | 58.0 | 57.5 | 57.0 | 56.5 | 56.0 | 55.5 | 54.5 | 54.0 |
| 6 | 73.8 | 73.2 | 72.6 | 71.4 | 70.8 | 70.2 | 69.6 | 69.0 | 68.4 | 67.8 | 67.2 | 66.6 | 65.4 | 64.8 |
| 7 | 86.1 | 85.4 | 84.7 | 83.3 | 82.6 | 81.9 | 81.2 | 80.5 | 79.8 | 79.1 | 78.4 | 77.7 | 76.3 | 75.6 |
| 8 | 98.4 | 97.6 | 96.8 | 95.2 | 94.4 | 93.6 | 92.8 | 92.0 | 91.2 | 90.4 | 89.6 | 88.8 | 87.2 | 86.4 |
| 9 | 110.7 | 109.8 | 108.9 | 107.1 | 106.2 | 105.3 | 104.4 | 103.5 | 102.6 | 101.7 | 100.8 | 99.9 | 98.1 | 97.2 |

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# 4°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | 
|---|---|---|---|---|---|---|---|
| 00 | 8.84358 | 109 | 8.84464 | 109 | 1.15536 | 9.99894 | 100 |
| 01 | 8.84467 | 108 | 8.84573 | 109 | 1.15427 | 9.99894 | 99 |
| 02 | 8.84575 | 107 | 8.84682 | 108 | 1.15318 | 9.99893 | 98 |
| 03 | 8.84682 | 108 | 8.84790 | 108 | 1.15210 | 9.99892 | 97 |
| 04 | 8.84790 | 107 | 8.84898 | 108 | 1.15102 | 9.99892 | 96 |
| 05 | 8.84897 | 107 | 8.85006 | 107 | 1.14994 | 9.99891 | 95 |
| 06 | 8.85004 | 107 | 8.85113 | 107 | 1.14887 | 9.99891 | 94 |
| 07 | 8.85111 | 106 | 8.85220 | 107 | 1.14780 | 9.99890 | 93 |
| 08 | 8.85217 | 106 | 8.85327 | 107 | 1.14673 | 9.99890 | 92 |
| 09 | 8.85323 | 106 | 8.85434 | 106 | 1.14566 | 9.99889 | 91 |
| 10 | 8.85429 | 106 | 8.85540 | 106 | 1.14460 | 9.99889 | 90 |
| 11 | 8.85535 | 105 | 8.85646 | 106 | 1.14354 | 9.99888 | 89 |
| 12 | 8.85640 | 105 | 8.85752 | 106 | 1.14248 | 9.99888 | 88 |
| 13 | 8.85745 | 105 | 8.85858 | 105 | 1.14142 | 9.99887 | 87 |
| 14 | 8.85850 | 105 | 8.85963 | 106 | 1.14037 | 9.99887 | 86 |
| 15 | 8.85955 | 104 | 8.86069 | 104 | 1.13931 | 9.99886 | 85 |
| 16 | 8.86059 | 104 | 8.86173 | 105 | 1.13827 | 9.99885 | 84 |
| 17 | 8.86163 | 104 | 8.86278 | 105 | 1.13722 | 9.99885 | 83 |
| 18 | 8.86267 | 103 | 8.86383 | 104 | 1.13617 | 9.99884 | 82 |
| 19 | 8.86370 | 104 | 8.86487 | 104 | 1.13513 | 9.99884 | 81 |
| 20 | 8.86474 | 103 | 8.86591 | 103 | 1.13409 | 9.99883 | 80 |
| 21 | 8.86577 | 103 | 8.86694 | 104 | 1 13306 | 9.99883 | 79 |
| 22 | 8.86680 | 102 | 8.86798 | 103 | 1.13202 | 9.99882 | 78 |
| 23 | 8.86782 | 103 | 8.86901 | 103 | 1.13099 | 9.99882 | 77 |
| 24 | 8.86885 | 102 | 8.87004 | 102 | 1.12996 | 9.99881 | 76 |
| 25 | 8.86987 | 102 | 8.87106 | 103 | 1.12894 | 9.99880 | 75 |
| 26 | 8.87089 | 101 | 8.87209 | 102 | 1.12791 | 9.99880 | 74 |
| 27 | 8.87190 | 102 | 8.87311 | 102 | 1.12689 | 9.99879 | 73 |
| 28 | 8.87292 | 101 | 8.87413 | 102 | 1.12587 | 9.99879 | 72 |
| 29 | 8.87393 | 101 | 8.87515 | 101 | 1.12485 | 9.99878 | 71 |
| 30 | 8.87494 | 100 | 8.87616 | 101 | 1.12384 | 9.99878 | 70 |
| 31 | 8.87594 | 101 | 8.87717 | 102 | 1.12283 | 9.99877 | 69 |
| 32 | 8.87695 | 100 | 8.87819 | 100 | 1.12181 | 9.99876 | 68 |
| 33 | 8.87795 | 100 | 8.87919 | 101 | 1.12081 | 9.99876 | 67 |
| 34 | 8.87895 | 100 | 8.88020 | 100 | 1.11980 | 9.99875 | 66 |
| 35 | 8.87995 | 99 | 8.88120 | 100 | 1.11880 | 9.99875 | 65 |
| 36 | 8.88094 | 100 | 8.88220 | 100 | 1.11780 | 9.99874 | 64 |
| 37 | 8.88194 | 99 | 8.88320 | 100 | 1.11680 | 9.99874 | 63 |
| 38 | 8.88293 | 99 | 8.88420 | 99 | 1.11580 | 9.99873 | 62 |
| 39 | 8.88392 | 98 | 8.88519 | 99 | 1.11481 | 9.99872 | 61 |
| 40 | 8.88490 | 99 | 8.88618 | 99 | 1.11382 | 9.99872 | 60 |
| 41 | 8.88589 | 98 | 8.88717 | 99 | 1.11283 | 9.99871 | 59 |
| 42 | 8.88687 | 98 | 8.88816 | 99 | 1.11184 | 9.99871 | 58 |
| 43 | 8.88785 | 98 | 8.88915 | 98 | 1.11085 | 9.99870 | 57 |
| 44 | 8.88883 | 97 | 8.89013 | 98 | 1.10987 | 9.99869 | 56 |
| 45 | 8.88980 | 97 | 8.89111 | 98 | 1.10889 | 9.99869 | 55 |
| 46 | 8.89077 | 97 | 8.89209 | 98 | 1.10791 | 9.99868 | 54 |
| 47 | 8.89174 | 97 | 8.89307 | 97 | 1.10693 | 9.99868 | 53 |
| 48 | 8.89271 | 97 | 8.89404 | 97 | 1.10596 | 9.99867 | 52 |
| 49 | 8.89368 | 96 | 8.89501 | 97 | 1.10499 | 9.99867 | 51 |
| 50 | 8.89464 | | 8.89598 | | 1.10402 | 9.99866 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 109 | 108 | 107 | 106 | 105 | 104 | 108 | 102 | 101 | 100 | 99 | 98 | 97 | 96 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10.9 | 10.8 | 10.7 | 10.6 | 10.5 | 10.4 | 10.3 | 10.2 | 10.1 | 10.0 | 9.9 | 9.8 | 9.7 | 9.6 |
| 2 | 21.8 | 21.6 | 21.4 | 21.2 | 21.0 | 20.8 | 20.6 | 20.4 | 20.2 | 20.0 | 19.8 | 19.6 | 19.4 | 19.2 |
| 3 | 32.7 | 32.4 | 32.1 | 31.8 | 31.5 | 31.2 | 30.9 | 30.6 | 30.3 | 30.0 | 29.7 | 29.4 | 29.1 | 28.8 |
| 4 | 43.6 | 43.2 | 42.8 | 42.4 | 42.0 | 41.6 | 41.2 | 40.8 | 40.4 | 40.0 | 39.6 | 39.2 | 38.8 | 38.4 |
| 5 | 54.5 | 54.0 | 53.5 | 53.0 | 52.5 | 52.0 | 51.5 | 51.0 | 50.5 | 50.0 | 49.5 | 49.0 | 48.5 | 48.0 |
| 6 | 65.4 | 64.8 | 64.2 | 63.6 | 63.0 | 62.4 | 61.8 | 61.2 | 60.6 | 60.0 | 59.4 | 58.8 | 58.2 | 57.6 |
| 7 | 76.3 | 75.6 | 74.9 | 74.2 | 73.5 | 72.8 | 72.1 | 71.4 | 70.7 | 70.0 | 69.3 | 68.6 | 67.9 | 67.2 |
| 8 | 87.2 | 86.4 | 85.6 | 84.8 | 84.0 | 83.2 | 82.4 | 81.6 | 80.8 | 80.0 | 79.2 | 78.4 | 77. | 76.8 |
| 9 | 98.1 | 97.2 | 96.3 | 95.4 | 94.5 | 93.6 | 92.7 | 91.8 | 90.9 | 90.0 | 89.1 | 88.2 | 87. | 86.4 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 8.89464 | 97 | 8 89598 | 97 | 1.10402 | 9.99866 | 50 |
| 51 | 8.89561 | 96 | 8.89695 | 97 | 1.10305 | 9.99865 | 49 |
| 52 | 8.89657 | 95 | 8.89792 | 96 | 1.10208 | 9.99865 | 48 |
| 53 | 8.89752 | 96 | 8.89888 | 96 | 1.10112 | 9.99864 | 47 |
| 54 | 8.89848 | 95 | 8.89984 | 96 | 1.10016 | 9.99864 | 46 |
| 55 | 8.89943 | 95 | 8.90080 | 96 | 1.09920 | 9.99863 | 45 |
| 56 | 8.90038 | 95 | 8.90176 | 96 | 1.09824 | 9.99862 | 44 |
| 57 | 8.90133 | 95 | 8.90272 | 95 | 1.09728 | 9.99862 | 43 |
| 58 | 8.90228 | 95 | 8.90367 | 95 | 1.09633 | 9.99861 | 42 |
| 59 | 8.90323 | 94 | 8.90462 | 95 | 1.09538 | 9.99860 | 41 |
| 60 | 8.90417 | 94 | 8.90557 | 95 | 1.09443 | 9.99860 | 40 |
| 61 | 8.90511 | 94 | 8.90652 | 94 | 1.09348 | 9.99859 | 39 |
| 62 | 8.90605 | 94 | 8.90746 | 95 | 1.09254 | 9.99859 | 38 |
| 63 | 8.90699 | 93 | 8.90841 | 94 | 1.09159 | 9.99858 | 37 |
| 64 | 8.90792 | 93 | 8.90935 | 94 | 1.09065 | 9.99857 | 36 |
| 65 | 8.90885 | 93 | 8.91029 | 93 | 1.08971 | 9.99857 | 35 |
| 66 | 8.90978 | 93 | 8.91122 | 94 | 1.08878 | 9.99856 | 34 |
| 67 | 8.91071 | 93 | 8.91216 | 93 | 1.08784 | 9.99856 | 33 |
| 68 | 8.91164 | 93 | 8.91309 | 93 | 1.08691 | 9.99855 | 32 |
| 69 | 8.91257 | 92 | 8.91402 | 93 | 1.08598 | 9.99854 | 31 |
| 70 | 8.91349 | 92 | 8.91495 | 93 | 1.08505 | 9.99854 | 30 |
| 71 | 8.91441 | 92 | 8.91588 | 92 | 1.08412 | 9.99853 | 29 |
| 72 | 8.91533 | 92 | 8.91680 | 93 | 1.08320 | 9.99852 | 28 |
| 73 | 8.91625 | 91 | 8.91773 | 92 | 1.08227 | 9.99852 | 27 |
| 74 | 8.91716 | 91 | 8.91865 | 92 | 1.08135 | 9.99851 | 26 |
| 75 | 8.91807 | 91 | 8.91957 | 92 | 1.08043 | 9.99851 | 25 |
| 76 | 8.91898 | 91 | 8.92049 | 91 | 1.07951 | 9.99850 | 24 |
| 77 | 8.91989 | 91 | 8.92140 | 91 | 1.07860 | 9.99849 | 23 |
| 78 | 8.92080 | 91 | 8.92231 | 92 | 1.07769 | 9.99849 | 22 |
| 79 | 8.92171 | 90 | 8.92323 | 91 | 1.07677 | 9.99848 | 21 |
| 80 | 8.92261 | 90 | 8.92414 | 90 | 1.07586 | 9.99847 | 20 |
| 81 | 8.92351 | 90 | 8.92504 | 91 | 1.07496 | 9.99847 | 19 |
| 82 | 8.92441 | 90 | 8.92595 | 90 | 1.07405 | 9.99846 | 18 |
| 83 | 8.92531 | 90 | 8.92685 | 91 | 1.07315 | 9.99846 | 17 |
| 84 | 8.92621 | 89 | 8.92776 | 90 | 1.07224 | 9.99845 | 16 |
| 85 | 8.92710 | 89 | 8.92866 | 90 | 1.07134 | 9.99844 | 15 |
| 86 | 8.92799 | 89 | 8.92956 | 89 | 1.07044 | 9.99844 | 14 |
| 87 | 8.92888 | 89 | 8.93045 | 90 | 1.06955 | 9.99843 | 13 |
| 88 | 8.92977 | 89 | 8.93135 | 89 | 1.06865 | 9.99842 | 12 |
| 89 | 8.93066 | 88 | 8.93224 | 89 | 1.06776 | 9.99842 | 11 |
| 90 | 8.93154 | 89 | 8.93313 | 89 | 1.06687 | 9.99841 | 10 |
| 91 | 8.93243 | 88 | 8.93402 | 89 | 1.06598 | 9.99840 | 09 |
| 92 | 8.93331 | 88 | 8.93491 | 89 | 1.06509 | 9.99840 | 08 |
| 93 | 8.93419 | 88 | 8.93580 | 88 | 1.06420 | 9.99839 | 07 |
| 94 | 8.93507 | 87 | 8.93668 | 88 | 1.06332 | 9.99838 | 06 |
| 95 | 8.93594 | 88 | 8.93756 | 89 | 1.06244 | 9.99838 | 05 |
| 96 | 8.93682 | 87 | 8.93845 | 87 | 1.06155 | 9.99837 | 04 |
| 97 | 8.93769 | 87 | 8.93932 | 88 | 1.06068 | 9.99836 | 03 |
| 98 | 8.93856 | 87 | 8.94020 | 88 | 1.05980 | 9.99836 | 02 |
| 99 | 8.93943 | 87 | 8.94108 | 87 | 1.05892 | 9.99835 | 01 |
| 100 | 8.94030 | | 8.94195 | | 1.05805 | 9.99834 | 00 |
| | Cos. | d | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 97 | 96 |
|---|---|---|
| 1 | 9.7 | 9.6 |
| 2 | 19.4 | 19.2 |
| 3 | 29.1 | 28.8 |
| 4 | 38.8 | 38.4 |
| 5 | 48.5 | 48.0 |
| 6 | 58.2 | 57.6 |
| 7 | 67.9 | 67.2 |
| 8 | 77.6 | 76.8 |
| 9 | 87.3 | 86.4 |

| | 95 |
|---|---|
| 1 | 9.5 |
| 2 | 19.0 |
| 3 | 28.5 |
| 4 | 38.0 |
| 5 | 47.5 |
| 6 | 57.0 |
| 7 | 66.5 |
| 8 | 76.0 |
| 9 | 85.5 |

| | 94 | 93 |
|---|---|---|
| 1 | 9.4 | 9.3 |
| 2 | 18.8 | 18.6 |
| 3 | 28.2 | 27.9 |
| 4 | 37.6 | 37.2 |
| 5 | 47.0 | 46.5 |
| 6 | 56.4 | 55.8 |
| 7 | 65.8 | 65.1 |
| 8 | 75.2 | 74.4 |
| 9 | 84.6 | 83.7 |

| | 92 |
|---|---|
| 1 | 9.2 |
| 2 | 18.4 |
| 3 | 27.6 |
| 4 | 36.8 |
| 5 | 46.0 |
| 6 | 55.2 |
| 7 | 64.4 |
| 8 | 73.6 |
| 9 | 82.8 |

| | 91 | 90 |
|---|---|---|
| 1 | 9.1 | 9.0 |
| 2 | 18.2 | 18.0 |
| 3 | 27.3 | 27.0 |
| 4 | 36.4 | 36.0 |
| 5 | 45.5 | 45.0 |
| 6 | 54.6 | 54.0 |
| 7 | 63.7 | 63.0 |
| 8 | 72.8 | 72.0 |
| 9 | 81.9 | 81.0 |

| | 89 |
|---|---|
| 1 | 8.9 |
| 2 | 17.8 |
| 3 | 26.7 |
| 4 | 35.6 |
| 5 | 44.5 |
| 6 | 53.4 |
| 7 | 62.3 |
| 8 | 71.2 |
| 9 | 80.1 |

| | 88 | 87 |
|---|---|---|
| 1 | 8.8 | 8.7 |
| 2 | 17.6 | 17.4 |
| 3 | 26.4 | 26.1 |
| 4 | 35.2 | 34.8 |
| 5 | 44.0 | 43.5 |
| 6 | 52.8 | 52.2 |
| 7 | 61.6 | 60.9 |
| 8 | 70.4 | 69.6 |
| 9 | 79.2 | 78.3 |

P. P.

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | ′ |
|---|---|---|---|---|---|---|---|
| 00 | 8.94030 | 86 | 8.94195 | 87 | 1.05805 | 9.99834 | 100 |
| 01 | 8.94116 | 87 | 8.94282 | 87 | 1.05718 | 9.99834 | 99 |
| 02 | 8.94203 | 86 | 8.94369 | 87 | 1.05631 | 9.99833 | 98 |
| 03 | 8.94289 | 86 | 8.94456 | 87 | 1.05544 | 9.99832 | 97 |
| 04 | 8.94375 | 86 | 8.94543 | 87 | 1.05457 | 9.99832 | 96 |
| 05 | 8.94461 | 85 | 8.94630 | 86 | 1.05370 | 9.99831 | 95 |
| 06 | 8.94546 | 86 | 8.94716 | 86 | 1.05284 | 9.99830 | 94 |
| 07 | 8.94632 | 85 | 8.94802 | 86 | 1.05198 | 9.99830 | 93 |
| 08 | 8.94717 | 85 | 8.94888 | 86 | 1.05112 | 9.99829 | 92 |
| 09 | 8.94802 | 85 | 8.94974 | 86 | 1.05026 | 9.99828 | 91 |
| 10 | 8.94887 | 85 | 8.95060 | 85 | 1.04940 | 9.99828 | 90 |
| 11 | 8.94972 | 85 | 8.95145 | 86 | 1.04855 | 9.99827 | 89 |
| 12 | 8.95057 | 84 | 8.95231 | 85 | 1.04769 | 9.99826 | 88 |
| 13 | 8.95141 | 85 | 8.95316 | 85 | 1.04684 | 9.99826 | 87 |
| 14 | 8.95226 | 84 | 8.95401 | 85 | 1.04599 | 9.99825 | 86 |
| 15 | 8.95310 | 84 | 8.95486 | 84 | 1.04514 | 9.99824 | 85 |
| 16 | 8.95394 | 84 | 8.95570 | 85 | 1.04430 | 9.99824 | 84 |
| 17 | 8.95478 | 84 | 8.95655 | 84 | 1.04345 | 9.99823 | 83 |
| 18 | 8.95562 | 83 | 8.95739 | 84 | 1.04261 | 9.99822 | 82 |
| 19 | 8.95645 | 83 | 8.95823 | 85 | 1.04177 | 9.99822 | 81 |
| 20 | 8.95728 | 84 | 8.95908 | 83 | 1.04092 | 9.99821 | 80 |
| 21 | 8.95812 | 83 | 8.95991 | 84 | 1.04009 | 9.99820 | 79 |
| 22 | 8.95895 | 83 | 8.96075 | 84 | 1.03925 | 9.99820 | 78 |
| 23 | 8.95978 | 82 | 8.96159 | 83 | 1.03841 | 9.99819 | 77 |
| 24 | 8.96060 | 83 | 8.96242 | 83 | 1.03758 | 9.99818 | 76 |
| 25 | 8.96143 | 82 | 8.96325 | 84 | 1.03675 | 9.99817 | 75 |
| 26 | 8.96225 | 83 | 8.96409 | 83 | 1.03591 | 9.99817 | 74 |
| 27 | 8.96308 | 82 | 8.96492 | 82 | 1.03508 | 9.99816 | 73 |
| 28 | 8.96390 | 82 | 8.96574 | 83 | 1.03426 | 9.99815 | 72 |
| 29 | 8.96472 | 81 | 8.96657 | 82 | 1.03343 | 9.99815 | 71 |
| 30 | 8.96553 | 82 | 8.96739 | 83 | 1.03261 | 9.99814 | 70 |
| 31 | 8.96635 | 81 | 8.96822 | 82 | 1.03178 | 9.99813 | 69 |
| 32 | 8.96716 | 82 | 8.96904 | 82 | 1.03096 | 9.99813 | 68 |
| 33 | 8.96798 | 81 | 8.96986 | 82 | 1.03014 | 9.99812 | 67 |
| 34 | 8.96879 | 81 | 8.97068 | 82 | 1.02932 | 9.99811 | 66 |
| 35 | 8.96960 | 81 | 8.97150 | 81 | 1.02850 | 9.99810 | 65 |
| 36 | 8.97041 | 81 | 8.97231 | 82 | 1.02769 | 9.99810 | 64 |
| 37 | 8.97122 | 80 | 8.97313 | 81 | 1.02687 | 9.99809 | 63 |
| 38 | 8.97202 | 81 | 8.97394 | 81 | 1.02606 | 9.99808 | 62 |
| 39 | 8.97283 | 80 | 8.97475 | 81 | 1.02525 | 9.99808 | 61 |
| 40 | 8.97363 | 80 | 8.97556 | 81 | 1.02444 | 9.99807 | 60 |
| 41 | 8.97443 | 80 | 8.97637 | 80 | 1.02363 | 9.99806 | 59 |
| 42 | 8.97523 | 80 | 8.97717 | 81 | 1.02283 | 9.99805 | 58 |
| 43 | 8.97603 | 79 | 8.97798 | 80 | 1.02202 | 9.99805 | 57 |
| 44 | 8.97682 | 80 | 8.97878 | 81 | 1.02122 | 9.99804 | 56 |
| 45 | 8.97762 | 79 | 8.97959 | 80 | 1.02041 | 9.99803 | 55 |
| 46 | 8.97841 | 79 | 8.98039 | 80 | 1.01961 | 9.99803 | 54 |
| 47 | 8.97920 | 80 | 8.98119 | 80 | 1.01881 | 9.99802 | 53 |
| 48 | 8.98000 | 78 | 8.98199 | 79 | 1.01801 | 9.99801 | 52 |
| 49 | 8.98078 | 79 | 8.98278 | 80 | 1.01722 | 9.99800 | 51 |
| 50 | 8.98157 | | 8.98358 | | 1.01642 | 9.99800 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 87 | 86 |
|---|---|---|
| 1 | 8.7 | 8.6 |
| 2 | 17.4 | 17.2 |
| 3 | 26.1 | 25.8 |
| 4 | 34.8 | 34.4 |
| 5 | 43.5 | 43.0 |
| 6 | 52.2 | 51.6 |
| 7 | 60.9 | 60.2 |
| 8 | 69.6 | 68.8 |
| 9 | 78.3 | 77.4 |

| | 85 | 84 |
|---|---|---|
| 1 | 8.5 | 8.4 |
| 2 | 17.0 | 16.8 |
| 3 | 25.5 | 25.2 |
| 4 | 34.0 | 33.6 |
| 5 | 42.5 | 42.0 |
| 6 | 51.0 | 50.4 |
| 7 | 59.5 | 58.8 |
| 8 | 68.0 | 67.2 |
| 9 | 76.5 | 75.6 |

| | 83 |
|---|---|
| 1 | 8.3 |
| 2 | 16.6 |
| 3 | 24.9 |
| 4 | 33.2 |
| 5 | 41.5 |
| 6 | 49.8 |
| 7 | 58.1 |
| 8 | 66.4 |
| 9 | 74.7 |

| | 82 | 81 |
|---|---|---|
| 1 | 8.2 | 8.1 |
| 2 | 16.4 | 16.2 |
| 3 | 24.6 | 24.3 |
| 4 | 32.8 | 32.4 |
| 5 | 41.0 | 40.5 |
| 6 | 49.2 | 48.6 |
| 7 | 57.4 | 56.7 |
| 8 | 65.6 | 64.8 |
| 9 | 73.8 | 72.9 |

| | 80 |
|---|---|
| 1 | 8.0 |
| 2 | 16.0 |
| 3 | 24.0 |
| 4 | 32.0 |
| 5 | 40.0 |
| 6 | 48.0 |
| 7 | 56.0 |
| 8 | 64.0 |
| 9 | 72.0 |

| | 79 | 78 |
|---|---|---|
| 1 | 7.9 | 7.8 |
| 2 | 15.8 | 15.6 |
| 3 | 23.7 | 23.4 |
| 4 | 31.6 | 31.2 |
| 5 | 39.5 | 39.0 |
| 6 | 47.4 | 46.8 |
| 7 | 55.3 | 54.6 |
| 8 | 63.2 | 62.4 |
| 9 | 71.1 | 70.2 |

P. P.

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 8.98157 | 79 | 8.98358 | 79 | 1.01642 | 9.99800 | 50 |
| 51 | 8.98236 | 78 | 8.98437 | 79 | 1.01563 | 9.99799 | 49 |
| 52 | 8.98314 | 79 | 8.98516 | 79 | 1.01484 | 9.99798 | 48 |
| 53 | 8.98393 | 78 | 8.98595 | 79 | 1.01405 | 9.99797 | 47 |
| 54 | 8.98471 | 78 | 8.98674 | 79 | 1.01326 | 9.99797 | 46 |
| 55 | 8.98549 | 78 | 8.98753 | 79 | 1.01247 | 9.99796 | 45 |
| 56 | 8.98627 | 78 | 8.98832 | 78 | 1.01168 | 9.99795 | 44 |
| 57 | 8.98705 | 77 | 8.98910 | 79 | 1.01090 | 9.99794 | 43 |
| 58 | 8.98782 | 78 | 8.98989 | 78 | 1.01011 | 9.99794 | 42 |
| 59 | 8.98860 | 77 | 8.99067 | 78 | 1.00933 | 9.99793 | 41 |
| 60 | 8.98937 | 78 | 8.99145 | 78 | 1.00855 | 9.99792 | 40 |
| 61 | 8.99015 | 77 | 8.99223 | 78 | 1.00777 | 9.99791 | 39 |
| 62 | 8.99092 | 77 | 8.99301 | 78 | 1.00699 | 9.99791 | 38 |
| 63 | 8.99169 | 76 | 8.99379 | 77 | 1.00621 | 9.99790 | 37 |
| 64 | 8.99245 | 77 | 8.99456 | 78 | 1.00544 | 9.99789 | 36 |
| 65 | 8.99322 | 77 | 8.99534 | 77 | 1.00466 | 9.99788 | 35 |
| 66 | 8.99399 | 76 | 8.99611 | 77 | 1.00389 | 9.99788 | 34 |
| 67 | 8.99475 | 76 | 8.99688 | 77 | 1.00312 | 9.99787 | 33 |
| 68 | 8.99551 | 77 | 8.99765 | 77 | 1.00235 | 9.99786 | 32 |
| 69 | 8.99628 | 76 | 8.99842 | 77 | 1.00158 | 9.99785 | 31 |
| 70 | 8.99704 | 75 | 8.99919 | 76 | 1.00081 | 9.99785 | 30 |
| 71 | 8.99779 | 76 | 8.99995 | 77 | 1.00005 | 9.99784 | 29 |
| 72 | 8.99855 | 76 | 9.00072 | 76 | 0.99928 | 9.99783 | 28 |
| 73 | 8.99931 | 75 | 9.00148 | 77 | 0.99852 | 9.99782 | 27 |
| 74 | 9.00006 | 76 | 9.00225 | 76 | 0.99775 | 9.99782 | 26 |
| 75 | 9.00082 | 75 | 9.00301 | 76 | 0.99699 | 9.99781 | 25 |
| 76 | 9.00157 | 75 | 9.00377 | 75 | 0.99623 | 9.99780 | 24 |
| 77 | 9.00232 | 75 | 9.00452 | 76 | 0.99548 | 9.99779 | 23 |
| 78 | 9.00307 | 75 | 9.00528 | 76 | 0.99472 | 9.99779 | 22 |
| 79 | 9.00382 | 74 | 9.00604 | 75 | 0.99396 | 9.99778 | 21 |
| 80 | 9.00456 | 75 | 9.00679 | 76 | 0.99321 | 9.99777 | 20 |
| 81 | 9.00531 | 74 | 9.00755 | 75 | 0.99245 | 9.99776 | 19 |
| 82 | 9.00605 | 75 | 9.00830 | 75 | 0.99170 | 9.99776 | 18 |
| 83 | 9.00680 | 74 | 9.00905 | 75 | 0.99095 | 9.99775 | 17 |
| 84 | 9.00754 | 74 | 9.00980 | 75 | 0.99020 | 9.99774 | 16 |
| 85 | 9.00828 | 74 | 9.01055 | 74 | 0.98945 | 9.99773 | 15 |
| 86 | 9.00902 | 74 | 9.01129 | 75 | 0.98871 | 9.99772 | 14 |
| 87 | 9.00976 | 73 | 9.01204 | 74 | 0.98796 | 9.99772 | 13 |
| 88 | 9.01049 | 74 | 9.01278 | 75 | 0.98722 | 9.99771 | 12 |
| 89 | 9.01123 | 73 | 9.01353 | 74 | 0.98647 | 9.99770 | 11 |
| 90 | 9.01196 | 73 | 9.01427 | 74 | 0.98573 | 9.99769 | 10 |
| 91 | 9.01269 | 74 | 9.01501 | 74 | 0.98499 | 9.99769 | 09 |
| 92 | 9.01343 | 73 | 9.01575 | 74 | 0.98425 | 9.99768 | 08 |
| 93 | 9.01416 | 73 | 9.01649 | 73 | 0.98351 | 9.99767 | 07 |
| 94 | 9.01489 | 72 | 9.01722 | 74 | 0.98278 | 9.99766 | 06 |
| 95 | 9.01561 | 73 | 9.01796 | 73 | 0.98204 | 9.99765 | 05 |
| 96 | 9.01634 | 73 | 9.01869 | 74 | 0.98131 | 9.99765 | 04 |
| 97 | 9.01707 | 72 | 9.01943 | 73 | 0.98057 | 9.99764 | 03 |
| 98 | 9.01779 | 72 | 9.02016 | 73 | 0.97984 | 9.99763 | 02 |
| 99 | 9.01851 | 72 | 9.02089 | 73 | 0.97911 | 9.99762 | 01 |
| 100 | 9.01923 | | 9.02162 | | 0.97838 | 9.99761 | 00 |
| | Cos. | d. | Cot. | d c. | Tang. | Sin. | |

P. P.

| | 79 | 78 |
|---|---|---|
| 1 | 7.9 | 7.8 |
| 2 | 15.8 | 15.6 |
| 3 | 23.7 | 23.4 |
| 4 | 31.6 | 31.2 |
| 5 | 39.5 | 39.0 |
| 6 | 47.4 | 46.8 |
| 7 | 55.3 | 54.6 |
| 8 | 63.2 | 62.4 |
| 9 | 71.1 | 70.2 |

| | 77 |
|---|---|
| 1 | 7.7 |
| 2 | 15.4 |
| 3 | 23.1 |
| 4 | 30.8 |
| 5 | 38.5 |
| 6 | 46.2 |
| 7 | 53.9 |
| 8 | 61.6 |
| 9 | 69.3 |

| | 76 |
|---|---|
| 1 | 7.6 |
| 2 | 15.2 |
| 3 | 22.8 |
| 4 | 30.4 |
| 5 | 38.0 |
| 6 | 45.6 |
| 7 | 53.2 |
| 8 | 60.8 |
| 9 | 68.4 |

| | 75 | 74 |
|---|---|---|
| 1 | 7.5 | 7.4 |
| 2 | 15.0 | 14.8 |
| 3 | 22.5 | 22.2 |
| 4 | 30.0 | 29.6 |
| 5 | 37.5 | 37.0 |
| 6 | 45.0 | 44.4 |
| 7 | 52.5 | 51.8 |
| 8 | 60.0 | 59.2 |
| 9 | 67.5 | 66.6 |

| | 73 |
|---|---|
| 1 | 7.3 |
| 2 | 14.6 |
| 3 | 21.9 |
| 4 | 29.2 |
| 5 | 36.5 |
| 6 | 43.8 |
| 7 | 51.1 |
| 8 | 58.4 |
| 9 | 65.7 |

| | 72 |
|---|---|
| 1 | 7.2 |
| 2 | 14.4 |
| 3 | 21.6 |
| 4 | 28.8 |
| 5 | 36.0 |
| 6 | 43.2 |
| 7 | 50.4 |
| 8 | 57.6 |
| 9 | 64.8 |

P. P.

# 6°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.01923 | 73 | 9.02162 | 73 | 0.97838 | 9.99761 | 100 |
| 01 | 9.01996 | 71 | 9.02235 | 73 | 0.97765 | 9.99761 | 99 |
| 02 | 9.02067 | 72 | 9.02308 | 72 | 0.97692 | 9.99760 | 98 |
| 03 | 9.02139 | 72 | 9.02380 | 73 | 0.97620 | 9.99759 | 97 |
| 04 | 9.02211 | 72 | 9.02453 | 72 | 0.97547 | 9.99758 | 96 |
| 05 | 9.02283 | 71 | 9.02525 | 72 | 0.97475 | 9.99757 | 95 |
| 06 | 9.02354 | 71 | 9.02597 | 73 | 0.97403 | 9.99757 | 94 |
| 07 | 9.02425 | 72 | 9.02670 | 72 | 0.97330 | 9.99756 | 93 |
| 08 | 9.02497 | 71 | 9.02742 | 71 | 0.97258 | 9.99755 | 92 |
| 09 | 9.02568 | 71 | 9.02813 | 72 | 0.97187 | 9.99754 | 91 |
| 10 | 9.02639 | 71 | 9.02885 | 72 | 0.97115 | 9.99753 | 90 |
| 11 | 9.02710 | 70 | 9.02957 | 71 | 0.97043 | 9.99753 | 89 |
| 12 | 9.02780 | 71 | 9.03028 | 72 | 0.96972 | 9.99752 | 88 |
| 13 | 9.02851 | 70 | 9.03100 | 71 | 0.96900 | 9.99751 | 87 |
| 14 | 9.02921 | 71 | 9.03171 | 71 | 0.96829 | 9.99750 | 86 |
| 15 | 9.02992 | 70 | 9.03242 | 72 | 0.96758 | 9.99749 | 85 |
| 16 | 9.03062 | 70 | 9.03314 | 71 | 0.96686 | 9.99749 | 84 |
| 17 | 9.03132 | 70 | 9.03385 | 70 | 0.96615 | 9.99748 | 83 |
| 18 | 9.03202 | 70 | 9.03455 | 71 | 0.96545 | 9.99747 | 82 |
| 19 | 9.03272 | 70 | 9.03526 | 71 | 0.96474 | 9.99746 | 81 |
| 20 | 9.03342 | 70 | 9.03597 | 70 | 0.96403 | 9.99745 | 80 |
| 21 | 9.03412 | 69 | 9.03667 | 71 | 0.96333 | 9.99744 | 79 |
| 22 | 9.03481 | 70 | 9.03738 | 70 | 0.96262 | 9.99744 | 78 |
| 23 | 9.03551 | 69 | 9.03808 | 70 | 0.96192 | 9.99743 | 77 |
| 24 | 9.03620 | 70 | 9.03878 | 70 | 0.96122 | 9.99742 | 76 |
| 25 | 9.03690 | 69 | 9.03948 | 70 | 0.96052 | 9.99741 | 75 |
| 26 | 9.03759 | 69 | 9.04018 | 70 | 0.95982 | 9.99740 | 74 |
| 27 | 9.03828 | 69 | 9.04088 | 70 | 0.95912 | 9.99739 | 73 |
| 28 | 9.03897 | 69 | 9.04158 | 70 | 0.95842 | 9.99739 | 72 |
| 29 | 9.03966 | 68 | 9.04228 | 69 | 0.95772 | 9.99738 | 71 |
| 30 | 9.04034 | 69 | 9.04297 | 70 | 0.95703 | 9.99737 | 70 |
| 31 | 9.04103 | 68 | 9.04367 | 69 | 0.95633 | 9.99736 | 69 |
| 32 | 9.04171 | 69 | 9.04436 | 69 | 0.95564 | 9.99735 | 68 |
| 33 | 9.04240 | 68 | 9.04505 | 69 | 0.95495 | 9.99734 | 67 |
| 34 | 9.04308 | 68 | 9.04574 | 69 | 0.95426 | 9.99734 | 66 |
| 35 | 9.04376 | 68 | 9.04643 | 69 | 0.95357 | 9.99733 | 65 |
| 36 | 9.04444 | 68 | 9.04712 | 69 | 0.95288 | 9.99732 | 64 |
| 37 | 9.04512 | 68 | 9.04781 | 69 | 0.95219 | 9.99731 | 63 |
| 38 | 9.04580 | 68 | 9.04850 | 68 | 0.95150 | 9.99730 | 62 |
| 39 | 9.04648 | 67 | 9.04918 | 69 | 0.95082 | 9.99729 | 61 |
| 40 | 9.04715 | 68 | 9.04987 | 68 | 0.95013 | 9.99728 | 60 |
| 41 | 9.04783 | 67 | 9.05055 | 69 | 0.94945 | 9.99728 | 59 |
| 42 | 9.04850 | 68 | 9.05124 | 68 | 0.94876 | 9.99727 | 58 |
| 43 | 9.04918 | 67 | 9.05192 | 68 | 0.94808 | 9.99726 | 57 |
| 44 | 9.04985 | 67 | 9.05260 | 68 | 0.94740 | 9.99725 | 56 |
| 45 | 9.05052 | 67 | 9.05328 | 68 | 0.94672 | 9.99724 | 55 |
| 46 | 9.05119 | 67 | 9.05396 | 67 | 0.94604 | 9.99723 | 54 |
| 47 | 9.05186 | 67 | 9.05463 | 68 | 0.94537 | 9.99723 | 53 |
| 48 | 9.05253 | 66 | 9.05531 | 68 | 0.94469 | 9.99722 | 52 |
| 49 | 9.05319 | 67 | 9.05599 | 67 | 0.94401 | 9.99721 | 51 |
| 50 | 9.05386 | | 9.05666 | | 0.94334 | 9.99720 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 73 |
|---|---|
| 1 | 7.3 |
| 2 | 14.6 |
| 3 | 21.9 |
| 4 | 29.2 |
| 5 | 36.5 |
| 6 | 43.8 |
| 7 | 51.1 |
| 8 | 58.4 |
| 9 | 65.7 |

| | 72 | 71 |
|---|---|---|
| 1 | 7.2 | 7.1 |
| 2 | 14.4 | 14.2 |
| 3 | 21.6 | 21.3 |
| 4 | 28.8 | 28.4 |
| 5 | 36.0 | 35.5 |
| 6 | 43.2 | 42.6 |
| 7 | 50.4 | 49.7 |
| 8 | 57.6 | 56.8 |
| 9 | 64.8 | 63.9 |

| | 70 |
|---|---|
| 1 | 7.0 |
| 2 | 14.0 |
| 3 | 21.0 |
| 4 | 28.0 |
| 5 | 35.0 |
| 6 | 42.0 |
| 7 | 49.0 |
| 8 | 56.0 |
| 9 | 63.0 |

| | 69 | 68 |
|---|---|---|
| 1 | 6.9 | 6.8 |
| 2 | 13.8 | 13.6 |
| 3 | 20.7 | 20.4 |
| 4 | 27.6 | 27.2 |
| 5 | 34.5 | 34.0 |
| 6 | 41.4 | 40.8 |
| 7 | 48.3 | 47.6 |
| 8 | 55.2 | 54.4 |
| 9 | 62.1 | 61.2 |

| | 67 |
|---|---|
| 1 | 6.7 |
| 2 | 13.4 |
| 3 | 20.1 |
| 4 | 26.8 |
| 5 | 33.5 |
| 6 | 40.2 |
| 7 | 46.9 |
| 8 | 53.6 |
| 9 | 60.3 |

| | 66 |
|---|---|
| 1 | 6.6 |
| 2 | 13.2 |
| 3 | 19.8 |
| 4 | 26.4 |
| 5 | 33.0 |
| 6 | 39.6 |
| 7 | 46.2 |
| 8 | 52.8 |
| 9 | 59.4 |

P. P.

83°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.05386 | 66 | 9.05666 | 67 | 0.94334 | 9.99720 | 50 |
| 51 | 9.05452 | 67 | 9.05733 | 68 | 0.94267 | 9.99719 | 49 |
| 52 | 9.05519 | 66 | 9.05801 | 67 | 0.94199 | 9.99718 | 48 |
| 53 | 9.05585 | 66 | 9.05868 | 67 | 0.94132 | 9.99717 | 47 |
| 54 | 9.05651 | 66 | 9.05935 | 67 | 0.94065 | 9.99716 | 46 |
| 55 | 9.05717 | 66 | 9.06002 | 66 | 0.93998 | 9.99716 | 45 |
| 56 | 9.05783 | 66 | 9.06068 | 67 | 0.93932 | 9.99715 | 44 |
| 57 | 9.05849 | 66 | 9.06135 | 67 | 0.93865 | 9.99714 | 43 |
| 58 | 9.05915 | 65 | 9.06202 | 66 | 0.93798 | 9.99713 | 42 |
| 59 | 9.05980 | 66 | 9.06268 | 67 | 0.93732 | 9.99712 | 41 |
| 60 | 9.06046 | 66 | 9.06335 | 66 | 0.93665 | 9.99711 | 40 |
| 61 | 9.06112 | 65 | 9.06401 | 66 | 0.93599 | 9.99710 | 39 |
| 62 | 9.06177 | 65 | 9.06467 | 67 | 0.93533 | 9.99709 | 38 |
| 63 | 9.06242 | 65 | 9.06534 | 66 | 0.93466 | 9.99709 | 37 |
| 64 | 9.06307 | 65 | 9.06600 | 66 | 0.93400 | 9.99708 | 36 |
| 65 | 9.06372 | 65 | 9.06666 | 65 | 0.93334 | 9.99707 | 35 |
| 66 | 9.06437 | 65 | 9.06731 | 66 | 0.93269 | 9.99706 | 34 |
| 67 | 9.06502 | 65 | 9.06797 | 66 | 0.93203 | 9.99705 | 33 |
| 68 | 9.06567 | 65 | 9.06863 | 65 | 0.93137 | 9.99704 | 32 |
| 69 | 9.06632 | 64 | 9.06928 | 66 | 0.93072 | 9.99703 | 31 |
| 70 | 9.06696 | 65 | 9.06994 | 65 | 0.93006 | 9.99702 | 30 |
| 71 | 9.06761 | 64 | 9.07059 | 65 | 0.92941 | 9.99701 | 29 |
| 72 | 9.06825 | 64 | 9.07124 | 66 | 0.92876 | 9.99701 | 28 |
| 73 | 9.06889 | 65 | 9.07190 | 65 | 0.92810 | 9.99700 | 27 |
| 74 | 9.06954 | 64 | 9.07255 | 65 | 0.92745 | 9.99699 | 26 |
| 75 | 9.07018 | 64 | 9.07320 | 65 | 0.92680 | 9.99698 | 25 |
| 76 | 9.07082 | 63 | 9.07385 | 64 | 0.92615 | 9.99697 | 24 |
| 77 | 9.07145 | 64 | 9.07449 | 65 | 0.92551 | 9.99696 | 23 |
| 78 | 9.07209 | 64 | 9.07514 | 65 | 0.92486 | 9.99695 | 22 |
| 79 | 9.07273 | 64 | 9.07579 | 64 | 0.92421 | 9.99694 | 21 |
| 80 | 9.07337 | 63 | 9.07643 | 65 | 0.92357 | 9.99693 | 20 |
| 81 | 9.07400 | 64 | 9.07708 | 64 | 0.92292 | 9.99693 | 19 |
| 82 | 9.07464 | 63 | 9.07772 | 64 | 0.92228 | 9.99692 | 18 |
| 83 | 9.07527 | 63 | 9.07836 | 64 | 0.92164 | 9.99691 | 17 |
| 84 | 9.07590 | 63 | 9.07900 | 64 | 0.92100 | 9.99690 | 16 |
| 85 | 9.07653 | 63 | 9.07964 | 64 | 0.92036 | 9.99689 | 15 |
| 86 | 9.07716 | 63 | 9.08028 | 64 | 0.91972 | 9.99688 | 14 |
| 87 | 9.07779 | 63 | 9.08092 | 64 | 0.91908 | 9.99687 | 13 |
| 88 | 9.07842 | 63 | 9.08156 | 64 | 0.91844 | 9.99686 | 12 |
| 89 | 9.07905 | 63 | 9.08220 | 63 | 0.91780 | 9.99685 | 11 |
| 90 | 9.07968 | 62 | 9.08283 | 64 | 0.91717 | 9.99684 | 10 |
| 91 | 9.08030 | 63 | 9.08347 | 63 | 0.91653 | 9.99683 | 09 |
| 92 | 9.08093 | 62 | 9.08410 | 64 | 0.91590 | 9.99682 | 08 |
| 93 | 9.08155 | 62 | 9.08474 | 63 | 0.91526 | 9.99682 | 07 |
| 94 | 9.08217 | 63 | 9.08537 | 63 | 0.91463 | 9.99681 | 06 |
| 95 | 9.08280 | 62 | 9.08600 | 63 | 0.91400 | 9.99680 | 05 |
| 96 | 9.08342 | 62 | 9.08663 | 63 | 0.91337 | 9.99679 | 04 |
| 97 | 9.08404 | 62 | 9.08726 | 63 | 0.91274 | 9.99678 | 03 |
| 98 | 9.08466 | 62 | 9.08789 | 63 | 0.91211 | 9.99677 | 02 |
| 99 | 9.08528 | 61 | 9.08852 | 62 | 0.91148 | 9.99676 | 01 |
| 100 | 9.08589 | | 9.08914 | | 0.91086 | 9.99675 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 68 |
|---|---|
| 1 | 6.8 |
| 2 | 13.6 |
| 3 | 20.4 |
| 4 | 27.2 |
| 5 | 34.0 |
| 6 | 40.8 |
| 7 | 47.6 |
| 8 | 54.4 |
| 9 | 61.2 |

| | 67 | 66 |
|---|---|---|
| 1 | 6.7 | 6.6 |
| 2 | 13.4 | 13.2 |
| 3 | 20.1 | 19.8 |
| 4 | 26.8 | 26.4 |
| 5 | 33.5 | 33.0 |
| 6 | 40.2 | 39.6 |
| 7 | 46.9 | 46.2 |
| 8 | 53.6 | 52.8 |
| 9 | 60.3 | 59.4 |

| | 65 |
|---|---|
| 1 | 6.5 |
| 2 | 13.0 |
| 3 | 19.5 |
| 4 | 26.0 |
| 5 | 32.5 |
| 6 | 39.0 |
| 7 | 45.5 |
| 8 | 52.0 |
| 9 | 58.5 |

| | 64 | 63 |
|---|---|---|
| 1 | 6.4 | 6.3 |
| 2 | 12.8 | 12.6 |
| 3 | 19.2 | 18.9 |
| 4 | 25.6 | 25.2 |
| 5 | 32.0 | 31.5 |
| 6 | 38.4 | 37.8 |
| 7 | 44.8 | 44.1 |
| 8 | 51.2 | 50.4 |
| 9 | 57.6 | 56.7 |

| | 62 |
|---|---|
| 1 | 6.2 |
| 2 | 12.4 |
| 3 | 18.6 |
| 4 | 24.8 |
| 5 | 31.0 |
| 6 | 37.2 |
| 7 | 43.4 |
| 8 | 49.6 |
| 9 | 55.8 |

| | 61 |
|---|---|
| 1 | 6.1 |
| 2 | 12.2 |
| 3 | 18.3 |
| 4 | 24.4 |
| 5 | 30.5 |
| 6 | 36.6 |
| 7 | 42.7 |
| 8 | 48.8 |
| 9 | 54.9 |

P. P.

# 7°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.08589 | 62 | 9.08914 | 63 | 0.91086 | 9.99675 | 100 |
| 01 | 9.08651 | 62 | 9.08977 | 63 | 0.91023 | 9.99674 | 99 |
| 02 | 9.08713 | 61 | 9.09040 | 62 | 0.90960 | 9.99673 | 98 |
| 03 | 9.08774 | 62 | 9.09102 | 62 | 0.90898 | 9.99672 | 97 |
| 04 | 9.08836 | 61 | 9.09164 | 63 | 0.90836 | 9.99671 | 96 |
| 05 | 9.08897 | 61 | 9.09227 | 62 | 0.90773 | 9.99670 | 95 |
| 06 | 9.08958 | 61 | 9.09289 | 62 | 0.90711 | 9.99669 | 94 |
| 07 | 9.09019 | 61 | 9.09351 | 62 | 0.90649 | 9.99669 | 93 |
| 08 | 9.09080 | 61 | 9.09413 | 62 | 0.90587 | 9.99668 | 92 |
| 09 | 9.09141 | 61 | 9.09475 | 62 | 0.90525 | 9.99667 | 91 |
| 10 | 9.09202 | 61 | 9.09537 | 61 | 0.90463 | 9.99666 | 90 |
| 11 | 9.09263 | 61 | 9.09598 | 62 | 0.90402 | 9.99665 | 89 |
| 12 | 9.09324 | 61 | 9.09660 | 62 | 0.90340 | 9.99664 | 88 |
| 13 | 9.09385 | 60 | 9.09722 | 61 | 0.90278 | 9.99663 | 87 |
| 14 | 9.09445 | 61 | 9.09783 | 62 | 0.90217 | 9.99662 | 86 |
| 15 | 9.09506 | 60 | 9.09845 | 61 | 0.90155 | 9.99661 | 85 |
| 16 | 9.09566 | 60 | 9.09906 | 61 | 0.90094 | 9.99660 | 84 |
| 17 | 9.09626 | 60 | 9.09967 | 61 | 0.90033 | 9.99659 | 83 |
| 18 | 9.09686 | 61 | 9.10028 | 61 | 0.89972 | 9.99658 | 82 |
| 19 | 9.09747 | 60 | 9.10089 | 61 | 0.89911 | 9.99657 | 81 |
| 20 | 9.09807 | 60 | 9.10150 | 61 | 0.89850 | 9.99656 | 80 |
| 21 | 9.09867 | 59 | 9.10211 | 61 | 0.89789 | 9.99655 | 79 |
| 22 | 9.09926 | 60 | 9.10272 | 61 | 0.89728 | 9.99654 | 78 |
| 23 | 9.09986 | 60 | 9.10333 | 61 | 0.89667 | 9.99653 | 77 |
| 24 | 9.10046 | 60 | 9.10394 | 60 | 0.89606 | 9.99652 | 76 |
| 25 | 9.10106 | 59 | 9.10454 | 61 | 0.89546 | 9.99651 | 75 |
| 26 | 9.10165 | 60 | 9.10515 | 60 | 0.89485 | 9.99650 | 74 |
| 27 | 9.10225 | 59 | 9.10575 | 60 | 0.89425 | 9.99649 | 73 |
| 28 | 9.10284 | 59 | 9.10635 | 61 | 0.89365 | 9.99648 | 72 |
| 29 | 9.10343 | 59 | 9.10696 | 60 | 0.89304 | 9.99648 | 71 |
| 30 | 9.10402 | 60 | 9.10756 | 60 | 0.89244 | 9.99647 | 70 |
| 31 | 9.10462 | 59 | 9.10816 | 60 | 0.89184 | 9.99646 | 69 |
| 32 | 9.10521 | 59 | 9.10876 | 60 | 0.89124 | 9.99645 | 68 |
| 33 | 9.10580 | 58 | 9.10936 | 60 | 0.89064 | 9.99644 | 67 |
| 34 | 9.10638 | 59 | 9.10996 | 60 | 0.89004 | 9.99643 | 66 |
| 35 | 9.10697 | 59 | 9.11056 | 59 | 0.88944 | 9.99642 | 65 |
| 36 | 9.10756 | 59 | 9.11115 | 60 | 0.88885 | 9.99641 | 64 |
| 37 | 9.10815 | 58 | 9.11175 | 59 | 0.88825 | 9.99640 | 63 |
| 38 | 9.10873 | 59 | 9.11234 | 60 | 0.88766 | 9.99639 | 62 |
| 39 | 9.10932 | 58 | 9.11294 | 59 | 0.88706 | 9.99638 | 61 |
| 40 | 9.10990 | 58 | 9.11353 | 60 | 0.88647 | 9.99637 | 60 |
| 41 | 9.11048 | 59 | 9.11413 | 59 | 0.88587 | 9.99636 | 59 |
| 42 | 9.11107 | 58 | 9.11472 | 59 | 0.88528 | 9.99635 | 58 |
| 43 | 9.11165 | 58 | 9.11531 | 59 | 0.88469 | 9.99634 | 57 |
| 44 | 9.11223 | 58 | 9.11590 | 59 | 0.88410 | 9.99633 | 56 |
| 45 | 9.11281 | 58 | 9.11649 | 59 | 0.88351 | 9.99632 | 55 |
| 46 | 9.11339 | 58 | 9.11708 | 59 | 0.88292 | 9.99631 | 54 |
| 47 | 9.11397 | 57 | 9.11767 | 59 | 0.88233 | 9.99630 | 53 |
| 48 | 9.11454 | 58 | 9.11826 | 58 | 0.88174 | 9.99629 | 52 |
| 49 | 9.11512 | 58 | 9.11884 | 59 | 0.88116 | 9.99628 | 51 |
| 50 | 9.11570 | | 9.11943 | | 0.88057 | 9.99627 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 63 | 62 | 61 | 60 | 59 | 58 |
|---|---|---|---|---|---|---|
| 1 | 6.3 | 6.2 | 6.1 | 6.0 | 5.9 | 5.8 |
| 2 | 12.6 | 12.4 | 12.2 | 12.0 | 11.8 | 11.6 |
| 3 | 18.9 | 18.6 | 18.3 | 18.0 | 17.7 | 17.4 |
| 4 | 25.2 | 24.8 | 24.4 | 24.0 | 23.6 | 23.2 |
| 5 | 31.5 | 31.0 | 30.5 | 30.0 | 29.5 | 29.0 |
| 6 | 37.8 | 37.2 | 36.6 | 36.0 | 35.4 | 34.8 |
| 7 | 44.1 | 43.4 | 42.7 | 42.0 | 41.3 | 40.6 |
| 8 | 50.4 | 49.6 | 48.8 | 48.0 | 47.2 | 46.4 |
| 9 | 56.7 | 55.8 | 54.9 | 54.0 | 53.1 | 52.2 |

P. P.

82°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | P. P. |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.11570 | 57 | 9.11943 | 58 | 0.88057 | 9.99627 | 50 | |
| 51 | 9.11627 | 58 | 9.12001 | 59 | 0.87999 | 9.99626 | 49 | 59 |
| 52 | 9.11685 | 57 | 9.12060 | 58 | 0.87940 | 9.99625 | 48 | 1 5.9 |
| 53 | 9.11742 | 57 | 9.12118 | 59 | 0.87882 | 9.99624 | 47 | 2 11.8 |
| 54 | 9.11799 | 58 | 9.12177 | 58 | 0.87823 | 9.99623 | 46 | 3 17.7 |
| 55 | 9.11857 | 57 | 9.12235 | 58 | 0.87765 | 9.99622 | 45 | 4 23.6 |
| 56 | 9.11914 | 57 | 9.12293 | 58 | 0.87707 | 9.99621 | 44 | 5 29.5 |
| 57 | 9.11971 | 57 | 9.12351 | 58 | 0.87649 | 9.99620 | 43 | 6 35.4 |
| 58 | 9.12028 | 57 | 9.12409 | 58 | 0.87591 | 9.99619 | 42 | 7 41.3 |
| 59 | 9.12085 | 57 | 9.12467 | 58 | 0.87533 | 9.99618 | 41 | 8 47.2 |
| 60 | 9.12142 | 56 | 9.12525 | 58 | 0.87475 | 9.99617 | 40 | 9 53.1 |
| 61 | 9.12198 | 57 | 9.12583 | 57 | 0.87417 | 9.99616 | 39 | 58 |
| 62 | 9.12255 | 57 | 9.12640 | 58 | 0.87360 | 9.99615 | 38 | 1 5.8 |
| 63 | 9.12312 | 56 | 9.12698 | 58 | 0.87302 | 9.99614 | 37 | 2 11.6 |
| 64 | 9.12368 | 57 | 9.12756 | 57 | 0.87244 | 9.99613 | 36 | 3 17.4 |
| 65 | 9.12425 | 56 | 9.12813 | 57 | 0.87187 | 9.99612 | 35 | 4 23.2 |
| 66 | 9.12481 | 56 | 9.12870 | 58 | 0.87130 | 9.99611 | 34 | 5 29.0 |
| 67 | 9.12537 | 57 | 9.12928 | 57 | 0.87072 | 9.99610 | 33 | 6 34.8 |
| 68 | 9.12594 | 56 | 9.12985 | 57 | 0.87015 | 9.99609 | 32 | 7 40.6 |
| 69 | 9.12650 | 56 | 9.13042 | 57 | 0.86958 | 9.99608 | 31 | 8 46.4 |
| 70 | 9.12706 | 56 | 9.13099 | 57 | 0.86901 | 9.99607 | 30 | 9 52.2 |
| 71 | 9.12762 | 56 | 9.13156 | 57 | 0.86844 | 9.99606 | 29 | 57 |
| 72 | 9.12818 | 56 | 9.13213 | 57 | 0.86787 | 9.99605 | 28 | 1 5.7 |
| 73 | 9.12874 | 56 | 9.13270 | 57 | 0.86730 | 9.99604 | 27 | 2 11.4 |
| 74 | 9.12930 | 55 | 9.13327 | 57 | 0.86673 | 9.99603 | 26 | 3 17.1 |
| 75 | 9.12985 | 56 | 9.13384 | 57 | 0.86616 | 9.99601 | 25 | 4 22.8 |
| 76 | 9.13041 | 56 | 9.13441 | 56 | 0.86559 | 9.99600 | 24 | 5 28.5 |
| 77 | 9.13097 | 55 | 9.13497 | 57 | 0.86503 | 9.99599 | 23 | 6 34.2 |
| 78 | 9.13152 | 56 | 9.13554 | 56 | 0.86446 | 9.99598 | 22 | 7 39.9 |
| 79 | 9.13208 | 55 | 9.13610 | 57 | 0.86390 | 9.99597 | 21 | 8 45.6 |
| 80 | 9.13263 | 55 | 9.13667 | 56 | 0.86333 | 9.99596 | 20 | 9 51.3 |
| 81 | 9.13318 | 55 | 9.13723 | 56 | 0.86277 | 9.99595 | 19 | 56 |
| 82 | 9.13373 | 56 | 9.13779 | 56 | 0.86221 | 9.99594 | 18 | 1 5.6 |
| 83 | 9.13429 | 55 | 9.13835 | 57 | 0.86165 | 9.99593 | 17 | 2 11.2 |
| 84 | 9.13484 | 55 | 9.13892 | 56 | 0.86108 | 9.99592 | 16 | 3 16.8 |
| 85 | 9.13539 | 55 | 9.13948 | 56 | 0.86052 | 9.99591 | 15 | 4 22.4 |
| 86 | 9.13594 | 55 | 9.14004 | 56 | 0.85996 | 9.99590 | 14 | 5 28.0 |
| 87 | 9.13649 | 54 | 9.14060 | 55 | 0.85940 | 9.99589 | 13 | 6 33.6 |
| 88 | 9.13703 | 55 | 9.14115 | 56 | 0.85885 | 9.99588 | 12 | 7 39.2 |
| 89 | 9.13758 | 55 | 9.14171 | 56 | 0.85829 | 9.99587 | 11 | 8 44.8 |
| 90 | 9.13813 | 54 | 9.14227 | 56 | 0.85773 | 9.99586 | 10 | 9 50.4 |
| 91 | 9.13867 | 55 | 9.14283 | 55 | 0.85717 | 9.99585 | 09 | 55 |
| 92 | 9.13922 | 54 | 9.14338 | 56 | 0.85662 | 9.99584 | 08 | 1 5.5 |
| 93 | 9.13976 | 55 | 9.14394 | 55 | 0.85606 | 9.99583 | 07 | 2 11.0 |
| 94 | 9.14031 | 54 | 9.14449 | 55 | 0.85551 | 9.99582 | 06 | 3 16.5 |
| 95 | 9.14085 | 54 | 9.14504 | 56 | 0.85496 | 9.99581 | 05 | 4 22.0 |
| 96 | 9.14139 | 54 | 9.14560 | 55 | 0.85440 | 9.99580 | 04 | 5 27.5 |
| 97 | 9.14193 | 55 | 9.14615 | 55 | 0.85385 | 9.99578 | 03 | 6 33.0 |
| 98 | 9.14248 | 54 | 9.14670 | 55 | 0.85330 | 9.99577 | 02 | 7 38.5 |
| 99 | 9.14302 | 54 | 9.14725 | 55 | 0.85275 | 9.99576 | 01 | 8 44.0 |
| 100 | 9.14356 | | 9.14780 | | 0.85220 | 9.99575 | 00 | 9 49.5 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | | P. P. |

P. P. (continued)

| 54 | |
|---|---|
| 1 | 5.4 |
| 2 | 10.8 |
| 3 | 16.2 |
| 4 | 21.6 |
| 5 | 27.0 |
| 6 | 32.4 |
| 7 | 37.8 |
| 8 | 43.2 |
| 9 | 48.6 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | P. P. |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.14356 | 53 | 9.14780 | 55 | 0.85220 | 9.99575 | 100 | |
| 01 | 9.14409 | 54 | 9.14835 | 55 | 0.85165 | 9.99574 | 99 | 55 |
| 02 | 9.14463 | 54 | 9.14890 | 55 | 0.85110 | 9.99573 | 98 | 1 \| 5.5 |
| 03 | 9.14517 | 54 | 9.14945 | 55 | 0.85055 | 9.99572 | 97 | 2 \| 11.0 |
| 04 | 9.14571 | 53 | 9.15000 | 54 | 0.85000 | 9.99571 | 96 | 3 \| 16.5 |
| 05 | 9.14624 | 54 | 9.15054 | 55 | 0.84946 | 9.99570 | 95 | 4 \| 22.0 |
| 06 | 9.14678 | 53 | 9.15109 | 55 | 0.84891 | 9.99569 | 94 | 5 \| 27.5; 6 \| 33.0 |
| 07 | 9.14731 | 54 | 9.15164 | 54 | 0.84836 | 9.99568 | 93 | 7 \| 38.5 |
| 08 | 9.14785 | 53 | 9.15218 | 55 | 0.84782 | 9.99567 | 92 | 8 \| 44.0 |
| 09 | 9.14838 | 53 | 9.15273 | 54 | 0.84727 | 9.99566 | 91 | 9 \| 49.5 |
| 10 | 9.14891 | 54 | 9.15327 | 54 | 0.84673 | 9.99565 | 90 | |
| 11 | 9.14945 | 53 | 9.15381 | 54 | 0.84619 | 9.99563 | 89 | 54 |
| 12 | 9.14998 | 53 | 9.15435 | 55 | 0.84565 | 9.99562 | 88 | 1 \| 5.4 |
| 13 | 9.15051 | 53 | 9.15490 | 54 | 0.84510 | 9.99561 | 87 | 2 \| 10.8 |
| 14 | 9.15104 | 53 | 9.15544 | 54 | 0.84456 | 9.99560 | 86 | 3 \| 16.2 |
| 15 | 9.15157 | 53 | 9.15598 | 54 | 0.84402 | 9.99559 | 85 | 4 \| 21.6 |
| 16 | 9.15210 | 53 | 9.15652 | 54 | 0.84348 | 9.99558 | 84 | 5 \| 27.0; 6 \| 32.4 |
| 17 | 9.15263 | 52 | 9.15706 | 54 | 0.84294 | 9.99557 | 83 | 7 \| 37.8 |
| 18 | 9.15315 | 53 | 9.15760 | 53 | 0.84240 | 9.99556 | 82 | 8 \| 43.2 |
| 19 | 9.15368 | 53 | 9.15813 | 54 | 0.84187 | 9.99555 | 81 | 9 \| 48.6 |
| 20 | 9.15421 | 52 | 9.15867 | 54 | 0.84133 | 9.99554 | 80 | |
| 21 | 9.15473 | 53 | 9.15921 | 53 | 0.84079 | 9.99553 | 79 | 53 |
| 22 | 9.15526 | 52 | 9.15974 | 54 | 0.84026 | 9.99552 | 78 | 1 \| 5.3 |
| 23 | 9.15578 | 53 | 9.16028 | 53 | 0.83972 | 9.99550 | 77 | 2 \| 10.6 |
| 24 | 9.15631 | 52 | 9.16081 | 54 | 0.83919 | 9.99549 | 76 | 3 \| 15.9 |
| 25 | 9.15683 | 52 | 9.16135 | 53 | 0.83865 | 9.99548 | 75 | 4 \| 21.2 |
| 26 | 9.15735 | 52 | 9.16188 | 53 | 0.83812 | 9.99547 | 74 | 5 \| 26.5; 6 \| 31.8 |
| 27 | 9.15787 | 53 | 9.16241 | 54 | 0.83759 | 9.99546 | 73 | 7 \| 37.1 |
| 28 | 9.15840 | 52 | 9.16295 | 53 | 0.83705 | 9.99545 | 72 | 8 \| 42.4 |
| 29 | 9.15892 | 52 | 9.16348 | 53 | 0.83652 | 9.99544 | 71 | 9 \| 47.7 |
| 30 | 9.15944 | 51 | 9.16401 | 53 | 0.83599 | 9.99543 | 70 | |
| 31 | 9.15995 | 52 | 9.16454 | 53 | 0.83546 | 9.99542 | 69 | 52 |
| 32 | 9.16047 | 52 | 9.16507 | 53 | 0.83493 | 9.99540 | 68 | 1 \| 5.2 |
| 33 | 9.16099 | 52 | 9.16560 | 53 | 0.83440 | 9.99539 | 67 | 2 \| 10.4 |
| 34 | 9.16151 | 52 | 9.16613 | 52 | 0.83387 | 9.99538 | 66 | 3 \| 15.6 |
| 35 | 9.16203 | 51 | 9.16665 | 53 | 0.83335 | 9.99537 | 65 | 4 \| 20.8 |
| 36 | 9.16254 | 52 | 9.16718 | 53 | 0.83282 | 9.99536 | 64 | 5 \| 26.0; 6 \| 31.2 |
| 37 | 9.16306 | 51 | 9.16771 | 52 | 0.83229 | 9.99535 | 63 | 7 \| 36.4 |
| 38 | 9.16357 | 52 | 9.16823 | 53 | 0.83177 | 9.99534 | 62 | 8 \| 41.6 |
| 39 | 9.16409 | 51 | 9.16876 | 52 | 0.83124 | 9.99533 | 61 | 9 \| 46.8 |
| 40 | 9.16460 | 51 | 9.16928 | 53 | 0.83072 | 9.99532 | 60 | |
| 41 | 9.16511 | 52 | 9.16981 | 52 | 0.83019 | 9.99530 | 59 | 51 |
| 42 | 9.16563 | 51 | 9.17033 | 52 | 0.82967 | 9.99529 | 58 | 1 \| 5.1 |
| 43 | 9.16614 | 51 | 9.17085 | 53 | 0.82915 | 9.99528 | 57 | 2 \| 10.2 |
| 44 | 9.16665 | 51 | 9.17138 | 52 | 0.82862 | 9.99527 | 56 | 3 \| 15.3 |
| 45 | 9.16716 | 51 | 9.17190 | 52 | 0.82810 | 9.99526 | 55 | 4 \| 20.4 |
| 46 | 9.16767 | 51 | 9.17242 | 52 | 0.82758 | 9.99525 | 54 | 5 \| 25.5; 6 \| 30.6 |
| 47 | 9.16818 | 51 | 9.17294 | 52 | 0.82706 | 9.99524 | 53 | 7 \| 35.7 |
| 48 | 9.16869 | 50 | 9.17346 | 52 | 0.82654 | 9.99523 | 52 | 8 \| 40.8 |
| 49 | 9.16919 | 51 | 9.17398 | 52 | 0.82602 | 9.99521 | 51 | 9 \| 45.9 |
| 50 | 9.16970 | | 9.17450 | | 0.82550 | 9.99520 | 50 | |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | | P. P. |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | P. P. |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.16970 | 51 | 9.17450 | 52 | 0.82550 | 9.99520 | 50 | |
| 51 | 9.17021 | 51 | 9.17502 | 51 | 0.82498 | 9.99519 | 49 | |
| 52 | 9.17072 | 50 | 9.17553 | 52 | 0.82447 | 9.99518 | 48 | |
| 53 | 9.17122 | 51 | 9.17605 | 52 | 0.82395 | 9.99517 | 47 | |
| 54 | 9.17173 | 50 | 9.17657 | 51 | 0.82343 | 9.99516 | 46 | |
| 55 | 9.17223 | 50 | 9.17708 | 52 | 0.82292 | 9.99515 | 45 | |
| 56 | 9.17273 | 51 | 9.17760 | 51 | 0.82240 | 9.99514 | 44 | |
| 57 | 9.17324 | 50 | 9.17811 | 52 | 0.82189 | 9.99512 | 43 | |
| 58 | 9.17374 | 50 | 9.17863 | 51 | 0.82137 | 9.99511 | 42 | |
| 59 | 9.17424 | 50 | 9.17914 | 51 | 0.82086 | 9.99510 | 41 | |
| 60 | 9.17474 | 50 | 9.17965 | 52 | 0.82035 | 9.99509 | 40 | |
| 61 | 9.17524 | 51 | 9.18017 | 51 | 0.81983 | 9.99508 | 39 | |
| 62 | 9.17575 | 49 | 9.18068 | 51 | 0.81932 | 9.99507 | 38 | |
| 63 | 9.17624 | 50 | 9.18119 | 51 | 0.81881 | 9.99505 | 37 | |
| 64 | 9.17674 | 50 | 9.18170 | 51 | 0.81830 | 9.99504 | 36 | |
| 65 | 9.17724 | 50 | 9.18221 | 51 | 0.81779 | 9.99503 | 35 | |
| 66 | 9.17774 | 50 | 9.18272 | 51 | 0.81728 | 9.99502 | 34 | |
| 67 | 9.17824 | 49 | 9.18323 | 51 | 0.81677 | 9.99501 | 33 | |
| 68 | 9.17873 | 50 | 9.18374 | 51 | 0.81626 | 9.99500 | 32 | |
| 69 | 9.17923 | 50 | 9.18425 | 50 | 0.81575 | 9.99499 | 31 | |
| 70 | 9.17973 | 49 | 9.18475 | 51 | 0.81525 | 9.99497 | 30 | |
| 71 | 9.18022 | 50 | 9.18526 | 51 | 0.81474 | 9.99496 | 29 | |
| 72 | 9.18072 | 49 | 9.18577 | 50 | 0.81423 | 9.99495 | 28 | |
| 73 | 9.18121 | 49 | 9.18627 | 51 | 0.81373 | 9.99494 | 27 | |
| 74 | 9.18170 | 50 | 9.18678 | 50 | 0.81322 | 9.99493 | 26 | |
| 75 | 9.18220 | 49 | 9.18728 | 50 | 0.81272 | 9.99492 | 25 | |
| 76 | 9.18269 | 49 | 9.18778 | 51 | 0.81222 | 9.99490 | 24 | |
| 77 | 9.18318 | 49 | 9.18829 | 50 | 0.81171 | 9.99489 | 23 | |
| 78 | 9.18367 | 49 | 9.18879 | 50 | 0.81121 | 9.99488 | 22 | |
| 79 | 9.18416 | 49 | 9.18929 | 50 | 0.81071 | 9.99487 | 21 | |
| 80 | 9.18465 | 49 | 9.18979 | 50 | 0.81021 | 9.99486 | 20 | |
| 81 | 9.18514 | 49 | 9.19029 | 51 | 0.80971 | 9.99485 | 19 | |
| 82 | 9.18563 | 49 | 9.19080 | 50 | 0.80920 | 9.99483 | 18 | |
| 83 | 9.18612 | 49 | 9.19130 | 49 | 0.80870 | 9.99482 | 17 | |
| 84 | 9.18661 | 48 | 9.19179 | 50 | 0.80821 | 9.99481 | 16 | |
| 85 | 9.18709 | 49 | 9.19229 | 50 | 0.80771 | 9.99480 | 15 | |
| 86 | 9.18758 | 48 | 9.19279 | 50 | 0.80721 | 9.99479 | 14 | |
| 87 | 9.18806 | 49 | 9.19329 | 50 | 0.80671 | 9.99477 | 13 | |
| 88 | 9.18855 | 49 | 9.19379 | 49 | 0.80621 | 9.99476 | 12 | |
| 89 | 9.18904 | 48 | 9.19428 | 50 | 0.80572 | 9.99475 | 11 | |
| 90 | 9.18952 | 48 | 9.19478 | 50 | 0.80522 | 9.99474 | 10 | |
| 91 | 9.19000 | 49 | 9.19528 | 49 | 0.80472 | 9.99473 | 09 | |
| 92 | 9.19049 | 48 | 9.19577 | 50 | 0.80423 | 9.99472 | 08 | |
| 93 | 9.19097 | 48 | 9.19627 | 49 | 0.80373 | 9.99470 | 07 | |
| 94 | 9.19145 | 48 | 9.19676 | 49 | 0.80324 | 9.99469 | 06 | |
| 95 | 9.19193 | 48 | 9.19725 | 50 | 0.80275 | 9.99468 | 05 | |
| 96 | 9.19241 | 48 | 9.19775 | 49 | 0.80225 | 9.99467 | 04 | |
| 97 | 9.19289 | 48 | 9.19824 | 49 | 0.80176 | 9.99466 | 03 | |
| 98 | 9.19337 | 48 | 9.19873 | 49 | 0.80127 | 9.99464 | 02 | |
| 99 | 9.19385 | 48 | 9.19922 | 49 | 0.80078 | 9.99463 | 01 | |
| 100 | 9.19433 | | 9.19971 | | 0.80029 | 9.99462 | 00 | |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | | P. P. |

P. P.

| | 52 | 51 | 50 | 49 | 48 |
|---|---|---|---|---|---|
| 1 | 5.2 | 5.1 | 5.0 | 4.9 | 4.8 |
| 2 | 10.4 | 10.2 | 10.0 | 9.8 | 9.6 |
| 3 | 15.6 | 15.3 | 15.0 | 14.7 | 14.4 |
| 4 | 20.8 | 20.4 | 20.0 | 19.6 | 19.2 |
| 5 | 26.0 | 25.5 | 25.0 | 24.5 | 24.0 |
| 6 | 31.2 | 30.6 | 30.0 | 29.4 | 28.8 |
| 7 | 36.4 | 35.7 | 35.0 | 34.3 | 33.6 |
| 8 | 41.6 | 40.8 | 40.0 | 39.2 | 38.4 |
| 9 | 46.8 | 45.9 | 45.0 | 44.1 | 43.2 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | P. P. |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.19433 | 48 | 9.19971 | 49 | 0.80029 | 9.99462 | 100 | |
| 01 | 9.19481 | 48 | 9.20020 | 49 | 0.79980 | 9.99461 | 99 | 49 |
| 02 | 9.19529 | 48 | 9.20069 | 49 | 0.79931 | 9.99460 | 98 | 1 4.9 |
| 03 | 9.19577 | 47 | 9.20118 | 49 | 0.79882 | 9.99458 | 97 | 2 9.8 |
| 04 | 9.19624 | 48 | 9.20167 | 49 | 0.79833 | 9.99457 | 96 | 3 14.7 |
| 05 | 9.19672 | 47 | 9.20216 | 49 | 0.79784 | 9.99456 | 95 | 4 19.6 |
| 06 | 9.19719 | 48 | 9.20265 | 48 | 0.79735 | 9.99455 | 94 | 5 24.5 |
| 07 | 9.19767 | 47 | 9.20313 | 49 | 0.79687 | 9.99454 | 93 | 6 29.4 |
| 08 | 9.19814 | 48 | 9.20362 | 49 | 0.79638 | 9.99452 | 92 | 7 34.3 |
| 09 | 9.19862 | 47 | 9.20411 | 48 | 0.79589 | 9.99451 | 91 | 8 39.2 |
| 10 | 9.19909 | 47 | 9.20459 | 49 | 0.79541 | 9.99450 | 90 | 9 44.1 |
| 11 | 9.19956 | 48 | 9.20508 | 48 | 0.79492 | 9.99449 | 89 | 48 |
| 12 | 9.20004 | 47 | 9.20556 | 49 | 0.79444 | 9.99447 | 88 | 1 4.8 |
| 13 | 9.20051 | 47 | 9.20605 | 48 | 0.79395 | 9.99446 | 87 | 2 9.6 |
| 14 | 9.20098 | 47 | 9.20653 | 48 | 0.79347 | 9.99445 | 86 | 3 14.4 |
| 15 | 9.20145 | 47 | 9.20701 | 49 | 0.79299 | 9.99444 | 85 | 4 19.2 |
| 16 | 9.20192 | 47 | 9.20750 | 48 | 0.79250 | 9.99443 | 84 | 5 24.0 |
| 17 | 9.20239 | 47 | 9.20798 | 48 | 0.79202 | 9.99441 | 83 | 6 28.8 |
| 18 | 9.20286 | 47 | 9.20846 | 48 | 0.79154 | 9.99440 | 82 | 7 33.6 |
| 19 | 9.20333 | 47 | 9.20894 | 48 | 0.79106 | 9.99439 | 81 | 8 38.4 |
| 20 | 9.20380 | 47 | 9.20942 | 48 | 0.79058 | 9.99438 | 80 | 9 43.2 |
| 21 | 9.20427 | 46 | 9.20990 | 48 | 0.79010 | 9.99436 | 79 | 47 |
| 22 | 9.20473 | 47 | 9.21038 | 48 | 0.78962 | 9.99435 | 78 | 1 4.7 |
| 23 | 9.20520 | 47 | 9.21086 | 48 | 0.78914 | 9.99434 | 77 | 2 9.4 |
| 24 | 9.20567 | 46 | 9.21134 | 48 | 0.78866 | 9.99433 | 76 | 3 14.1 |
| 25 | 9.20613 | 47 | 9.21182 | 47 | 0.78818 | 9.99432 | 75 | 4 18.8 |
| 26 | 9.20660 | 46 | 9.21229 | 48 | 0.78771 | 9.99430 | 74 | 5 23.5 |
| 27 | 9.20706 | 46 | 9.21277 | 48 | 0.78723 | 9.99429 | 73 | 6 28.2 |
| 28 | 9.20752 | 47 | 9.21325 | 47 | 0.78675 | 9.99428 | 72 | 7 32.9 |
| 29 | 9.20799 | 46 | 9.21372 | 48 | 0.78628 | 9.99427 | 71 | 8 37.6 |
| 30 | 9.20845 | 46 | 9.21420 | 47 | 0.78580 | 9.99425 | 70 | 9 42.3 |
| 31 | 9.20891 | 47 | 9.21467 | 48 | 0.78533 | 9.99424 | 69 | 46 |
| 32 | 9.20938 | 46 | 9.21515 | 47 | 0.78485 | 9.99423 | 68 | 1 4.6 |
| 33 | 9.20984 | 46 | 9.21562 | 48 | 0.78438 | 9.99422 | 67 | 2 9.2 |
| 34 | 9.21030 | 46 | 9.21610 | 47 | 0.78390 | 9.99420 | 66 | 3 13.8 |
| 35 | 9.21076 | 46 | 9.21657 | 47 | 0.78343 | 9.99419 | 65 | 4 18.4 |
| 36 | 9.21122 | 46 | 9.21704 | 47 | 0.78296 | 9.99418 | 64 | 5 23.0 |
| 37 | 9.21168 | 46 | 9.21751 | 47 | 0.78249 | 9.99417 | 63 | 6 27.6 |
| 38 | 9.21214 | 46 | 9.21798 | 48 | 0.78202 | 9.99415 | 62 | 7 32.2 |
| 39 | 9.21260 | 46 | 9.21846 | 47 | 0.78154 | 9.99414 | 61 | 8 36.8 |
| 40 | 9.21306 | 45 | 9.21893 | 47 | 0.78107 | 9.99413 | 60 | 9 41.4 |
| 41 | 9.21351 | 46 | 9.21940 | 47 | 0.78060 | 9.99412 | 59 | 45 |
| 42 | 9.21397 | 46 | 9.21987 | 47 | 0.78013 | 9.99410 | 58 | 1 4.5 |
| 43 | 9.21443 | 45 | 9.22034 | 46 | 0.77966 | 9.99409 | 57 | 2 9.0 |
| 44 | 9.21488 | 46 | 9.22080 | 47 | 0.77920 | 9.99408 | 56 | 3 13.5 |
| 45 | 9.21534 | 45 | 9.22127 | 47 | 0.77873 | 9.99407 | 55 | 4 18.0 |
| 46 | 9.21579 | 46 | 9.22174 | 47 | 0.77826 | 9.99405 | 54 | 5 22.5 |
| 47 | 9.21625 | 45 | 9.22221 | 46 | 0.77779 | 9.99404 | 53 | 6 27.0 |
| 48 | 9.21670 | 46 | 9.22267 | 47 | 0.77733 | 9.99403 | 52 | 7 31.5 |
| 49 | 9.21716 | 45 | 9.22314 | 47 | 0.77686 | 9.99402 | 51 | 8 36.0 |
| 50 | 9.21761 | | 9.22361 | | 0.77639 | 9.99400 | 50 | 9 40.5 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | | P. P. |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | | P. P. |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.21761 | 45 | 9.22361 | 46 | 0.77639 | 9.99400 | 50 | |
| 51 | 9.21806 | 45 | 9.22407 | 47 | 0.77593 | 9.99399 | 49 | 47 |
| 52 | 9.21851 | 46 | 9.22454 | 46 | 0.77546 | 9.99398 | 48 | 1 4.7 |
| 53 | 9.21897 | 45 | 9.22500 | 47 | 0.77500 | 9.99396 | 47 | 2 9.4 |
| 54 | 9.21942 | 45 | 9.22547 | 46 | 0.77453 | 9.99395 | 46 | 3 14.1 |
| 55 | 9.21987 | 45 | 9.22593 | 46 | 0.77407 | 9.99394 | 45 | 4 18.8 |
| 56 | 9.22032 | 45 | 9.22639 | 46 | 0.77361 | 9.99393 | 44 | 5 23.5 |
| 57 | 9.22077 | 45 | 9.22685 | 47 | 0.77315 | 9.99391 | 43 | 6 28.2 |
| 58 | 9.22122 | 45 | 9.22732 | 46 | 0.77268 | 9.99390 | 42 | 7 32.9 |
| 59 | 9.22167 | 44 | 9.22778 | 46 | 0.77222 | 9.99389 | 41 | 8 37.6 |
| 60 | 9.22211 | 45 | 9.22824 | 46 | 0.77176 | 9.99388 | 40 | 9 42.3 |
| 61 | 9.22256 | 45 | 9.22870 | 46 | 0.77130 | 9.99386 | 39 | 46 |
| 62 | 9.22301 | 45 | 9.22916 | 46 | 0.77084 | 9.99385 | 38 | 1 4.6 |
| 63 | 9.22346 | 44 | 9.22962 | 46 | 0.77038 | 9.99384 | 37 | 2 9.2 |
| 64 | 9.22390 | 45 | 9.23008 | 46 | 0.76992 | 9.99382 | 36 | 3 13.8 |
| 65 | 9.22435 | 45 | 9.23054 | 46 | 0.76946 | 9.99381 | 35 | 4 18.4 |
| 66 | 9.22480 | 44 | 9.23100 | 46 | 0.76900 | 9.99380 | 34 | 5 23.0 |
| 67 | 9.22524 | 44 | 9.23146 | 45 | 0.76854 | 9.99379 | 33 | 6 27.6 |
| 68 | 9.22568 | 45 | 9.23191 | 46 | 0.76809 | 9.99377 | 32 | 7 32.2 |
| 69 | 9.22613 | 44 | 9.23237 | 46 | 0.76763 | 9.99376 | 31 | 8 36.8 |
| 70 | 9.22657 | 45 | 9.23283 | 45 | 0.76717 | 9.99375 | 30 | 9 41.4 |
| 71 | 9.22702 | 44 | 9.23328 | 46 | 0.76672 | 9.99373 | 29 | 45 |
| 72 | 9.22746 | 44 | 9.23374 | 45 | 0.76626 | 9.99372 | 28 | 1 4.5 |
| 73 | 9.22790 | 44 | 9.23419 | 46 | 0.76581 | 9.99371 | 27 | 2 9.0 |
| 74 | 9.22834 | 44 | 9.23465 | 45 | 0.76535 | 9.99369 | 26 | 3 13.5 |
| 75 | 9.22878 | 44 | 9.23510 | 46 | 0.76490 | 9.99368 | 25 | 4 18.0 |
| 76 | 9.22922 | 45 | 9.23556 | 45 | 0.76444 | 9.99367 | 24 | 5 22.5 |
| 77 | 9.22967 | 44 | 9.23601 | 45 | 0.76399 | 9.99366 | 23 | 6 27.0 |
| 78 | 9.23011 | 43 | 9.23646 | 46 | 0.76354 | 9.99364 | 22 | 7 31.5 |
| 79 | 9.23054 | 44 | 9.23692 | 45 | 0.76308 | 9.99363 | 21 | 8 36.0 |
| 80 | 9.23098 | 44 | 9.23737 | 45 | 0.76263 | 9.99362 | 20 | 9 40.5 |
| 81 | 9.23142 | 44 | 9.23782 | 45 | 0.76218 | 9.99360 | 19 | 44 |
| 82 | 9.23186 | 44 | 9.23827 | 45 | 0.76173 | 9.99359 | 18 | 1 4.4 |
| 83 | 9.23230 | 44 | 9.23872 | 45 | 0.76128 | 9.99358 | 17 | 2 8.8 |
| 84 | 9.23274 | 43 | 9.23917 | 45 | 0.76083 | 9.99356 | 16 | 3 13.2 |
| 85 | 9.23317 | 44 | 9.23962 | 45 | 0.76038 | 9.99355 | 15 | 4 17.6 |
| 86 | 9.23361 | 43 | 9.24007 | 45 | 0.75993 | 9.99354 | 14 | 5 22.0 |
| 87 | 9.23404 | 44 | 9.24052 | 45 | 0.75948 | 9.99352 | 13 | 6 26.4 |
| 88 | 9.23448 | 43 | 9.24097 | 45 | 0.75903 | 9.99351 | 12 | 7 30.8 |
| 89 | 9.23491 | 44 | 9.24142 | 44 | 0.75858 | 9.99350 | 11 | 8 35.2 |
| 90 | 9.23535 | 43 | 9.24186 | 45 | 0.75814 | 9.99348 | 10 | 9 39.6 |
| 91 | 9.23578 | 44 | 9.24231 | 45 | 0.75769 | 9.99347 | 09 | 43 |
| 92 | 9.23622 | 43 | 9.24276 | 45 | 0.75724 | 9.99346 | 08 | 1 4.3 |
| 93 | 9.23665 | 43 | 9.24321 | 44 | 0.75679 | 9.99344 | 07 | 2 8.6 |
| 94 | 9.23708 | 44 | 9.24365 | 45 | 0.75635 | 9.99343 | 06 | 3 12.9 |
| 95 | 9.23752 | 43 | 9.24410 | 44 | 0.75590 | 9.99342 | 05 | 4 17.2 |
| 96 | 9.23795 | 43 | 9.24454 | 45 | 0.75546 | 9.99340 | 04 | 5 21.5 |
| 97 | 9.23838 | 43 | 9.24499 | 44 | 0.75501 | 9.99339 | 03 | 6 25.8 |
| 98 | 9.23881 | 43 | 9.24543 | 45 | 0.75457 | 9.99338 | 02 | 7 30.1 |
| 99 | 9.23924 | 43 | 9.24588 | 44 | 0.75412 | 9.99336 | 01 | 8 34.4 |
| 100 | 9.23967 | | 9.24632 | . | 0.75368 | 9.99335 | 00 | 9 38.7 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | | P. P. |

# 10°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.23967 | 43 | 9.24632 | 44 | 0.75368 | 9.99335 | 100 |
| 01 | 9.24010 | 43 | 9.24676 | 44 | 0.75324 | 9.99334 | 99 |
| 02 | 9.24053 | 43 | 9.24720 | 45 | 0.75280 | 9.99332 | 98 |
| 03 | 9.24096 | 43 | 9.24765 | 44 | 0.75235 | 9.99331 | 97 |
| 04 | 9.24139 | 42 | 9.24809 | 44 | 0.75191 | 9.99330 | 96 |
| 05 | 9.24181 | 43 | 9.24853 | 44 | 0.75147 | 9.99328 | 95 |
| 06 | 9.24224 | 43 | 9.24897 | 44 | 0.75103 | 9.99327 | 94 |
| 07 | 9.24267 | 43 | 9.24941 | 44 | 0.75059 | 9.99326 | 93 |
| 08 | 9.24310 | 42 | 9.24985 | 44 | 0.75015 | 9.99324 | 92 |
| 09 | 9.24352 | 43 | 9.25029 | 44 | 0.74971 | 9.99323 | 91 |
| 10 | 9.24395 | 42 | 9.25073 | 44 | 0.74927 | 9.99322 | 90 |
| 11 | 9.24437 | 43 | 9.25117 | 44 | 0.74883 | 9.99320 | 89 |
| 12 | 9.24480 | 42 | 9.25161 | 44 | 0.74839 | 9.99319 | 88 |
| 13 | 9.24522 | 43 | 9.25205 | 43 | 0.74795 | 9.99318 | 87 |
| 14 | 9.24565 | 42 | 9.25248 | 44 | 0.74752 | 9.99316 | 86 |
| 15 | 9.24607 | 42 | 9.25292 | 44 | 0.74708 | 9.99315 | 85 |
| 16 | 9.24649 | 43 | 9.25336 | 43 | 0.74664 | 9.99314 | 84 |
| 17 | 9.24692 | 42 | 9.25379 | 44 | 0.74621 | 9.99312 | 83 |
| 18 | 9.24734 | 42 | 9.25423 | 43 | 0.74577 | 9.99311 | 82 |
| 19 | 9.24776 | 42 | 9.25466 | 44 | 0.74534 | 9.99310 | 81 |
| 20 | 9.24818 | 42 | 9.25510 | 43 | 0.74490 | 9.99308 | 80 |
| 21 | 9.24860 | 42 | 9.25553 | 44 | 0.74447 | 9.99307 | 79 |
| 22 | 9.24902 | 42 | 9.25597 | 43 | 0.74403 | 9.99305 | 78 |
| 23 | 9.24944 | 42 | 9.25640 | 44 | 0.74360 | 9.99304 | 77 |
| 24 | 9.24986 | 42 | 9.25684 | 43 | 0.74316 | 9.99303 | 76 |
| 25 | 9.25028 | 42 | 9.25727 | 43 | 0.74273 | 9.99301 | 75 |
| 26 | 9.25070 | 42 | 9.25770 | 43 | 0.74230 | 9.99300 | 74 |
| 27 | 9.25112 | 42 | 9.25813 | 44 | 0.74187 | 9.99299 | 73 |
| 28 | 9.25154 | 42 | 9.25857 | 43 | 0.74143 | 9.99297 | 72 |
| 29 | 9.25196 | 41 | 9.25900 | 43 | 0.74100 | 9.99296 | 71 |
| 30 | 9.25237 | 42 | 9.25943 | 43 | 0.74057 | 9.99294 | 70 |
| 31 | 9.25279 | 42 | 9.25986 | 43 | 0.74014 | 9.99293 | 69 |
| 32 | 9.25321 | 41 | 9.26029 | 43 | 0.73971 | 9.99292 | 68 |
| 33 | 9.25362 | 42 | 9.26072 | 43 | 0.73928 | 9.99290 | 67 |
| 34 | 9.25404 | 41 | 9.26115 | 43 | 0.73885 | 9.99289 | 66 |
| 35 | 9.25445 | 42 | 9.26158 | 43 | 0.73842 | 9.99288 | 65 |
| 36 | 9.25487 | 41 | 9.26201 | 42 | 0.73799 | 9.99286 | 64 |
| 37 | 9.25528 | 42 | 9.26243 | 43 | 0.73757 | 9.99285 | 63 |
| 38 | 9.25570 | 41 | 9.26286 | 43 | 0.73714 | 9.99283 | 62 |
| 39 | 9.25611 | 41 | 9.26329 | 43 | 0.73671 | 9.99282 | 61 |
| 40 | 9.25652 | 42 | 9.26372 | 42 | 0.73628 | 9.99281 | 60 |
| 41 | 9.25694 | 41 | 9.26414 | 43 | 0.73586 | 9.99279 | 59 |
| 42 | 9.25735 | 41 | 9.26457 | 43 | 0.73543 | 9.99278 | 58 |
| 43 | 9.25776 | 41 | 9.26500 | 42 | 0.73500 | 9.99276 | 57 |
| 44 | 9.25817 | 41 | 9.26542 | 43 | 0.73458 | 9.99275 | 56 |
| 45 | 9.25858 | 41 | 9.26585 | 42 | 0.73415 | 9.99274 | 55 |
| 46 | 9.25899 | 41 | 9.26627 | 43 | 0.73373 | 9.99272 | 54 |
| 47 | 9.25940 | 41 | 9.26670 | 42 | 0.73330 | 9.99271 | 53 |
| 48 | 9.25981 | 41 | 9.26712 | 42 | 0.73288 | 9.99269 | 52 |
| 49 | 9.26022 | 41 | 9.26754 | 43 | 0.73246 | 9.99268 | 51 |
| 50 | 9.26063 | | 9.26797 | | 0.73203 | 9.99267 | 50 |
| | Cos. | d. | Cot. | d. c | Tang. | Sin. | |

P. P.

| | 44 | 43 | 42 | 41 |
|---|---|---|---|---|
| 1 | 4.4 | 4.3 | 4.2 | 4.1 |
| 2 | 8.8 | 8.6 | 8.4 | 8.2 |
| 3 | 13.2 | 12.9 | 12.6 | 12.3 |
| 4 | 17.6 | 17.2 | 16.8 | 16.4 |
| 5 | 22.0 | 21.5 | 21.0 | 20.5 |
| 6 | 26.4 | 25.8 | 25.2 | 24.6 |
| 7 | 30.8 | 30.1 | 29.4 | 28.7 |
| 8 | 35.2 | 34.4 | 33.6 | 32.8 |
| 9 | 39.6 | 38.7 | 37.8 | 36.9 |

| | Sin. | d. | Tang. | d. c | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.26063 | 41 | 9.26797 | 42 | 0.73203 | 9.99267 | 50 |
| 51 | 9.26104 | 41 | 9.26839 | 42 | 0.73161 | 9.99265 | 49 |
| 52 | 9.26145 | 41 | 9.26881 | 42 | 0.73119 | 9.99264 | 48 |
| 53 | 9.26186 | 41 | 9.26923 | 43 | 0.73077 | 9.99262 | 47 |
| 54 | 9.26227 | 40 | 9.26966 | 42 | 0.73034 | 9.99261 | 46 |
| 55 | 9.26267 | 41 | 9.27008 | 42 | 0.72992 | 9.99260 | 45 |
| 56 | 9.26308 | 41 | 9.27050 | 42 | 0.72950 | 9.99258 | 44 |
| 57 | 9.26349 | 40 | 9.27092 | 42 | 0.72908 | 9.99257 | 43 |
| 58 | 9.26389 | 41 | 9.27134 | 42 | 0.72866 | 9.99255 | 42 |
| 59 | 9.26430 | 40 | 9.27176 | 42 | 0.72824 | 9.99254 | 41 |
| 60 | 9.26470 | 41 | 9.27218 | 42 | 0.72782 | 9.99252 | 40 |
| 61 | 9.26511 | 40 | 9.27260 | 42 | 0.72740 | 9.99251 | 39 |
| 62 | 9.26551 | 41 | 9.27302 | 41 | 0.72698 | 9.99250 | 38 |
| 63 | 9.26592 | 40 | 9.27343 | 42 | 0.72657 | 9.99248 | 37 |
| 64 | 9.26632 | 40 | 9.27385 | 42 | 0.72615 | 9.99247 | 36 |
| 65 | 9.26672 | 41 | 9.27427 | 42 | 0.72573 | 9.99245 | 35 |
| 66 | 9.26713 | 40 | 9.27469 | 41 | 0.72531 | 9.99244 | 34 |
| 67 | 9.26753 | 40 | 9.27510 | 42 | 0.72490 | 9.99243 | 33 |
| 68 | 9.26793 | 40 | 9.27552 | 42 | 0.72448 | 9.99241 | 32 |
| 69 | 9.26833 | 40 | 9.27594 | 41 | 0.72406 | 9.99240 | 31 |
| 70 | 9.26873 | 40 | 9.27635 | 42 | 0.72365 | 9.99238 | 30 |
| 71 | 9.26913 | 41 | 9.27677 | 41 | 0.72323 | 9.99237 | 29 |
| 72 | 9.26954 | 40 | 9.27718 | 42 | 0.72282 | 9.99236 | 28 |
| 73 | 9.26994 | 40 | 9.27760 | 41 | 0.72240 | 9.99234 | 27 |
| 74 | 9.27034 | 39 | 9.27801 | 41 | 0.72199 | 9.99233 | 26 |
| 75 | 9.27073 | 40 | 9.27842 | 42 | 0.72158 | 9.99231 | 25 |
| 76 | 9.27113 | 40 | 9.27884 | 41 | 0.72116 | 9.99230 | 24 |
| 77 | 9.27153 | 40 | 9.27925 | 41 | 0.72075 | 9.99228 | 23 |
| 78 | 9.27193 | 40 | 9.27966 | 42 | 0.72034 | 9.99227 | 22 |
| 79 | 9.27233 | 40 | 9.28008 | 41 | 0.71992 | 9.99225 | 21 |
| 80 | 9.27273 | 39 | 9.28049 | 41 | 0.71951 | 9.99224 | 20 |
| 81 | 9.27312 | 40 | 9.28090 | 41 | 0.71910 | 9.99222 | 19 |
| 82 | 9.27352 | 40 | 9.28131 | 41 | 0.71869 | 9.99221 | 18 |
| 83 | 9.27392 | 39 | 9.28172 | 41 | 0.71828 | 9.99220 | 17 |
| 84 | 9.27431 | 40 | 9.28213 | 41 | 0.71787 | 9.99218 | 16 |
| 85 | 9.27471 | 39 | 9.28254 | 41 | 0.71746 | 9.99217 | 15 |
| 86 | 9.27510 | 40 | 9.28295 | 41 | 0.71705 | 9.99215 | 14 |
| 87 | 9.27550 | 39 | 9.28336 | 41 | 0.71664 | 9.99214 | 13 |
| 88 | 9.27589 | 40 | 9.28377 | 41 | 0.71623 | 9.99212 | 12 |
| 89 | 9.27629 | 39 | 9.28418 | 41 | 0.71582 | 9.99211 | 11 |
| 90 | 9.27668 | 39 | 9.28459 | 41 | 0.71541 | 9.99209 | 10 |
| 91 | 9.27707 | 40 | 9.28500 | 40 | 0.71500 | 9.99208 | 09 |
| 92 | 9.27747 | 39 | 9.28540 | 41 | 0.71460 | 9.99206 | 08 |
| 93 | 9.27786 | 39 | 9.28581 | 41 | 0.71419 | 9.99205 | 07 |
| 94 | 9.27825 | 39 | 9.28622 | 40 | 0.71378 | 9.99203 | 06 |
| 95 | 9.27864 | 40 | 9.28662 | 41 | 0.71338 | 9.99202 | 05 |
| 96 | 9.27904 | 39 | 9.28703 | 41 | 0.71297 | 9.99201 | 04 |
| 97 | 9.27943 | 39 | 9.28744 | 40 | 0.71256 | 9.99199 | 03 |
| 98 | 9.27982 | 39 | 9.28784 | 41 | 0.71216 | 9.99198 | 02 |
| 99 | 9.28021 | 39 | 9.28825 | 40 | 0.71175 | 9.99196 | 01 |
| 100 | 9.28060 | | 9.28865 | | 0.71135 | 9.99195 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 43 | 42 | 41 | 40 |
|---|---|---|---|---|
| 1 | 4.3 | 4.2 | 4.1 | 4.0 |
| 2 | 8.6 | 8.4 | 8.2 | 8.0 |
| 3 | 12.9 | 12.6 | 12.3 | 12.0 |
| 4 | 17.2 | 16.8 | 16.4 | 16.0 |
| 5 | 21.5 | 21.0 | 20.5 | 20.0 |
| 6 | 24.8 | 25.2 | 24.6 | 24.0 |
| 7 | 29.1 | 29.4 | 28.7 | 28.0 |
| 8 | 33.4 | 33.6 | 32.8 | 32.0 |
| 9 | 37.7 | 37.8 | 36.9 | 36.0 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.28060 | 39 | 9.28865 | 41 | 0.71135 | 9.99195 | 100 |
| 01 | 9.28099 | 39 | 9.28906 | 40 | 0.71094 | 9.99193 | 99 |
| 02 | 9.28138 | 39 | 9.28946 | 40 | 0.71054 | 9.99192 | 98 |
| 03 | 9.28177 | 39 | 9.28986 | 41 | 0.71014 | 9.99190 | 97 |
| 04 | 9.28216 | 38 | 9.29027 | 40 | 0.70973 | 9.99189 | 96 |
| 05 | 9.28254 | 39 | 9.29067 | 40 | 0.70933 | 9.99187 | 95 |
| 06 | 9.28293 | 39 | 9.29107 | 41 | 0.70893 | 9.99186 | 94 |
| 07 | 9.28332 | 39 | 9.29148 | 40 | 0.70852 | 9.99184 | 93 |
| 08 | 9.28371 | 38 | 9.29188 | 40 | 0.70812 | 9.99183 | 92 |
| 09 | 9.28409 | 39 | 9.29228 | 40 | 0.70772 | 9.99181 | 91 |
| 10 | 9.28448 | 39 | 9.29268 | 40 | 0.70732 | 9.99180 | 90 |
| 11 | 9.28487 | 38 | 9.29308 | 40 | 0.70692 | 9.99178 | 89 |
| 12 | 9.28525 | 39 | 9.29348 | 40 | 0.70652 | 9.99177 | 88 |
| 13 | 9.28564 | 38 | 9.29388 | 40 | 0.70612 | 9.99175 | 87 |
| 14 | 9.28602 | 39 | 9.29428 | 40 | 0.70572 | 9.99174 | 86 |
| 15 | 9.28641 | 38 | 9.29468 | 40 | 0.70532 | 9.99172 | 85 |
| 16 | 9.28679 | 39 | 9.29508 | 40 | 0.70492 | 9.99171 | 84 |
| 17 | 9.28718 | 38 | 9.29548 | 40 | 0.70452 | 9.99169 | 83 |
| 18 | 9.28756 | 38 | 9.29588 | 40 | 0.70412 | 9.99168 | 82 |
| 19 | 9.28794 | 39 | 9.29628 | 40 | 0.70372 | 9.99166 | 81 |
| 20 | 9.28833 | 38 | 9.29668 | 39 | 0.70332 | 9.99165 | 80 |
| 21 | 9.28871 | 38 | 9.29707 | 40 | 0.70293 | 9.99163 | 79 |
| 22 | 9.28909 | 38 | 9.29747 | 40 | 0.70253 | 9.99162 | 78 |
| 23 | 9.28947 | 38 | 9.29787 | 40 | 0.70213 | 9.99160 | 77 |
| 24 | 9.28985 | 39 | 9.29827 | 39 | 0.70173 | 9.99159 | 76 |
| 25 | 9.29024 | 38 | 9.29866 | 40 | 0.70134 | 9.99157 | 75 |
| 26 | 9.29062 | 38 | 9.29906 | 39 | 0.70094 | 9.99156 | 74 |
| 27 | 9.29100 | 38 | 9.29945 | 40 | 0.70055 | 9.99154 | 73 |
| 28 | 9.29138 | 38 | 9.29985 | 39 | 0.70015 | 9.99153 | 72 |
| 29 | 9.29176 | 38 | 9.30024 | 40 | 0.69976 | 9.99151 | 71 |
| 30 | 9.29214 | 38 | 9.30064 | 39 | 0.69936 | 9.99150 | 70 |
| 31 | 9.29252 | 37 | 9.30103 | 40 | 0.69897 | 9.99148 | 69 |
| 32 | 9.29289 | 38 | 9.30143 | 39 | 0.69857 | 9.99147 | 68 |
| 33 | 9.29327 | 38 | 9.30182 | 39 | 0.69818 | 9.99145 | 67 |
| 34 | 9.29365 | 38 | 9.30221 | 40 | 0.69779 | 9.99144 | 66 |
| 35 | 9.29403 | 38 | 9.30261 | 39 | 0.69739 | 9.99142 | 65 |
| 36 | 9.29441 | 37 | 9.30300 | 39 | 0.69700 | 9.99141 | 64 |
| 37 | 9.29478 | 38 | 9.30339 | 39 | 0.69661 | 9.99139 | 63 |
| 38 | 9.29516 | 38 | 9.30378 | 40 | 0.69622 | 9.99138 | 62 |
| 39 | 9.29554 | 37 | 9.30418 | 39 | 0.69582 | 9.99136 | 61 |
| 40 | 9.29591 | 38 | 9.30457 | 39 | 0.69543 | 9.99135 | 60 |
| 41 | 9.29629 | 37 | 9.30496 | 39 | 0.69504 | 9.99133 | 59 |
| 42 | 9.29666 | 38 | 9.30535 | 39 | 0.69465 | 9.99132 | 58 |
| 43 | 9.29704 | 37 | 9.30574 | 39 | 0.69426 | 9.99130 | 57 |
| 44 | 9.29741 | 38 | 9.30613 | 39 | 0.69387 | 9.99128 | 56 |
| 45 | 9.29779 | 37 | 9.30652 | 39 | 0.69348 | 9.99127 | 55 |
| 46 | 9.29816 | 38 | 9.30691 | 39 | 0.69309 | 9.99125 | 54 |
| 47 | 9.29854 | 37 | 9.30730 | 39 | 0.69270 | 9.99124 | 53 |
| 48 | 9.29891 | 37 | 9.30769 | 38 | 0.69231 | 9.99122 | 52 |
| 49 | 9.29928 | 38 | 9.30807 | 39 | 0.69193 | 9.99121 | 51 |
| 50 | 9.29966 | | 9.30846 | | 0.69154 | 9.99119 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 41 |
|---|---|
| 1 | 4.1 |
| 2 | 8.2 |
| 3 | 12.3 |
| 4 | 16.4 |
| 5 | 20.5 |
| 6 | 24.6 |
| 7 | 28.7 |
| 8 | 32.8 |
| 9 | 36.9 |

| | 40 |
|---|---|
| 1 | 4.0 |
| 2 | 8.0 |
| 3 | 12.0 |
| 4 | 16.0 |
| 5 | 20.0 |
| 6 | 24.0 |
| 7 | 28.0 |
| 8 | 32.0 |
| 9 | 36.0 |

| | 39 |
|---|---|
| 1 | 3.9 |
| 2 | 7.8 |
| 3 | 11.7 |
| 4 | 15.6 |
| 5 | 19.5 |
| 6 | 23.4 |
| 7 | 27.3 |
| 8 | 31.2 |
| 9 | 35.1 |

| | 38 |
|---|---|
| 1 | 3.8 |
| 2 | 7.6 |
| 3 | 11.4 |
| 4 | 15.2 |
| 5 | 19.0 |
| 6 | 22.8 |
| 7 | 26.6 |
| 8 | 30.4 |
| 9 | 34.2 |

P. P.

| | Sin. | d. | Tang | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.29966 | 37 | 9.30846 | 39 | 0.69154 | 9.99119 | 50 |
| 51 | 9.30003 | 37 | 9.30885 | 39 | 0.69115 | 9.99118 | 49 |
| 52 | 9.30040 | 37 | 9.30924 | 39 | 0.69076 | 9.99116 | 48 |
| 53 | 9.30077 | 37 | 9.30963 | 38 | 0.69037 | 9.99115 | 47 |
| 54 | 9.30114 | 37 | 9.31001 | 39 | 0.68999 | 9.99113 | 46 |
| 55 | 9.30151 | 37 | 9.31040 | 38 | 0.68960 | 9.99112 | 45 |
| 56 | 9.30188 | 38 | 9.31078 | 39 | 0.68922 | 9.99110 | 44 |
| 57 | 9.30226 | 37 | 9.31117 | 39 | 0.68883 | 9.99108 | 43 |
| 58 | 9.30263 | 36 | 9.31156 | 38 | 0.68844 | 9.99107 | 42 |
| 59 | 9.30299 | 37 | 9.31194 | 39 | 0.68806 | 9.99105 | 41 |
| 60 | 9.30336 | 37 | 9.31233 | 38 | 0.68767 | 9.99104 | 40 |
| 61 | 9.30373 | 37 | 9.31271 | 39 | 0.68729 | 9.99102 | 39 |
| 62 | 9.30410 | 37 | 9.31310 | 38 | 0.68690 | 9.99101 | 38 |
| 63 | 9.30447 | 37 | 9.31348 | 38 | 0.68652 | 9.99099 | 37 |
| 64 | 9.30484 | 37 | 9.31386 | 39 | 0.68614 | 9.99098 | 36 |
| 65 | 9.30521 | 36 | 9.31425 | 38 | 0.68575 | 9.99096 | 35 |
| 66 | 9.30557 | 37 | 9.31463 | 38 | 0.68537 | 9.99094 | 34 |
| 67 | 9.30594 | 37 | 9.31501 | 39 | 0.68499 | 9.99093 | 33 |
| 68 | 9.30631 | 36 | 9.31540 | 38 | 0.68460 | 9.99091 | 32 |
| 69 | 9.30667 | 37 | 9.31578 | 38 | 0.68422 | 9.99090 | 31 |
| 70 | 9.30704 | 37 | 9.31616 | 38 | 0.68384 | 9.99088 | 30 |
| 71 | 9.30741 | 36 | 9.31654 | 38 | 0.68346 | 9.99087 | 29 |
| 72 | 9.30777 | 37 | 9.31692 | 38 | 0.68308 | 9.99085 | 28 |
| 73 | 9.30814 | 36 | 9.31730 | 38 | 0.68270 | 9.99083 | 27 |
| 74 | 9.30850 | 37 | 9.31768 | 38 | 0.68232 | 9.99082 | 26 |
| 75 | 9.30887 | 36 | 9.31806 | 38 | 0.68194 | 9.99080 | 25 |
| 76 | 9.30923 | 37 | 9.31844 | 38 | 0.68156 | 9.99079 | 24 |
| 77 | 9.30960 | 36 | 9.31882 | 38 | 0.68118 | 9.99077 | 23 |
| 78 | 9.30996 | 36 | 9.31920 | 38 | 0.68080 | 9.99076 | 22 |
| 79 | 9.31032 | 36 | 9.31958 | 38 | 0.68042 | 9.99074 | 21 |
| 80 | 9.31068 | 37 | 9.31996 | 38 | 0.68004 | 9.99072 | 20 |
| 81 | 9.31105 | 36 | 9.32034 | 38 | 0.67966 | 9.99071 | 19 |
| 82 | 9.31141 | 36 | 9.32072 | 38 | 0.67928 | 9.99069 | 18 |
| 83 | 9.31177 | 36 | 9.32110 | 37 | 0.67890 | 9.99068 | 17 |
| 84 | 9.31213 | 37 | 9.32147 | 38 | 0.67853 | 9.99066 | 16 |
| 85 | 9.31250 | 36 | 9.32185 | 38 | 0.67815 | 9.99064 | 15 |
| 86 | 9.31286 | 36 | 9.32223 | 37 | 0.67777 | 9.99063 | 14 |
| 87 | 9.31322 | 36 | 9.32260 | 38 | 0.67740 | 9.99061 | 13 |
| 88 | 9.31358 | 36 | 9.32298 | 38 | 0.67702 | 9.99060 | 12 |
| 89 | 9.31394 | 36 | 9.32336 | 37 | 0.67664 | 9.99058 | 11 |
| 90 | 9.31430 | 36 | 9.32373 | 38 | 0.67627 | 9.99056 | 10 |
| 91 | 9.31466 | 36 | 9.32411 | 37 | 0.67589 | 9.99055 | 09 |
| 92 | 9.31502 | 36 | 9.32448 | 38 | 0.67552 | 9.99053 | 08 |
| 93 | 9.31538 | 35 | 9.32486 | 37 | 0.67514 | 9.99052 | 07 |
| 94 | 9.31573 | 36 | 9.32523 | 38 | 0.67477 | 9.99050 | 06 |
| 95 | 9.31609 | 36 | 9.32561 | 37 | 0.67439 | 9.99048 | 05 |
| 96 | 9.31645 | 36 | 9.32598 | 38 | 0.67402 | 9.99047 | 04 |
| 97 | 9.31681 | 36 | 9.32636 | 37 | 0.67364 | 9.99045 | 03 |
| 98 | 9.31717 | 35 | 9.32673 | 37 | 0.67327 | 9.99044 | 02 |
| 99 | 9.31752 | 36 | 9.32710 | 37 | 0.67290 | 9.99042 | 01 |
| 100 | 9.31788 | | 9.32747 | | 0.67253 | 9.99040 | 00 |
| . | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 38 |
|---|---|
| 1 | 3.8 |
| 2 | 7.6 |
| 3 | 11.4 |
| 4 | 15.2 |
| 5 | 19.0 |
| 6 | 22.8 |
| 7 | 26.6 |
| 8 | 30.4 |
| 9 | 34.2 |

| | 37 |
|---|---|
| 1 | 3.7 |
| 2 | 7.4 |
| 3 | 11.1 |
| 4 | 14.8 |
| 5 | 18.5 |
| 6 | 22.2 |
| 7 | 25.9 |
| 8 | 29.6 |
| 9 | 33.3 |

| | 36 |
|---|---|
| 1 | 3.6 |
| 2 | 7.2 |
| 3 | 10.8 |
| 4 | 14.4 |
| 5 | 18.0 |
| 6 | 21.6 |
| 7 | 25.2 |
| 8 | 28.8 |
| 9 | 32.4 |

| | 35 |
|---|---|
| 1 | 3.5 |
| 2 | 7.0 |
| 3 | 10.5 |
| 4 | 14.0 |
| 5 | 17.5 |
| 6 | 21.0 |
| 7 | 24.5 |
| 8 | 28.0 |
| 9 | 31.5 |

# 12°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.31788 | 36 | 9.32747 | 38 | 0.67253 | 9.99040 | 100 |
| 01 | 9.31824 | 35 | 9.32785 | 37 | 0.67215 | 9.99039 | 99 |
| 02 | 9.31859 | 36 | 9.32822 | 37 | 0.67178 | 9.99037 | 98 |
| 03 | 9.31895 | 35 | 9.32859 | 37 | 0.67141 | 9.99036 | 97 |
| 04 | 9.31930 | 36 | 9.32896 | 37 | 0.67104 | 9.99034 | 96 |
| 05 | 9.31966 | 35 | 9.32933 | 38 | 0.67067 | 9.99032 | 95 |
| 06 | 9.32001 | 36 | 9.32971 | 37 | 0.67029 | 9.99031 | 94 |
| 07 | 9.32037 | 35 | 9.33008 | 37 | 0.66992 | 9.99029 | 93 |
| 08 | 9.32072 | 36 | 9.33045 | 37 | 0.66955 | 9.99028 | 92 |
| 09 | 9.32108 | 35 | 9.33082 | 37 | 0.66918 | 9.99026 | 91 |
| 10 | 9.32143 | 35 | 9.33119 | 37 | 0.66881 | 9.99024 | 90 |
| 11 | 9.32178 | 36 | 9.33156 | 37 | 0.66844 | 9.99023 | 89 |
| 12 | 9.32214 | 35 | 9.33193 | 37 | 0.66807 | 9.99021 | 88 |
| 13 | 9.32249 | 35 | 9.33230 | 36 | 0.66770 | 9.99019 | 87 |
| 14 | 9.32284 | 35 | 9.33266 | 37 | 0.66734 | 9.99018 | 86 |
| 15 | 9.32319 | 36 | 9.33303 | 37 | 0.66697 | 9.99016 | 85 |
| 16 | 9.32355 | 35 | 9.33340 | 37 | 0.66660 | 9.99014 | 84 |
| 17 | 9.32390 | 35 | 9.33377 | 37 | 0.66623 | 9.99013 | 83 |
| 18 | 9.32425 | 35 | 9.33414 | 36 | 0.66586 | 9.99011 | 82 |
| 19 | 9.32460 | 35 | 9.33450 | 37 | 0.66550 | 9.99010 | 81 |
| 20 | 9.32495 | 35 | 9.33487 | 37 | 0.66513 | 9.99008 | 80 |
| 21 | 9.32530 | 35 | 9.33524 | 36 | 0.66476 | 9.99006 | 79 |
| 22 | 9.32565 | 35 | 9.33560 | 37 | 0.66440 | 9.99005 | 78 |
| 23 | 9.32600 | 35 | 9.33597 | 37 | 0.66403 | 9.99003 | 77 |
| 24 | 9.32635 | 35 | 9.33634 | 36 | 0.66366 | 9.99001 | 76 |
| 25 | 9.32670 | 35 | 9.33670 | 37 | 0.66330 | 9.99000 | 75 |
| 26 | 9.32705 | 35 | 9.33707 | 36 | 0.66293 | 9.98998 | 74 |
| 27 | 9.32740 | 35 | 9.33743 | 37 | 0.66257 | 9.98996 | 73 |
| 28 | 9.32775 | 34 | 9.33780 | 36 | 0.66220 | 9.98995 | 72 |
| 29 | 9.32809 | 35 | 9.33816 | 37 | 0.66184 | 9.98993 | 71 |
| 30 | 9.32844 | 35 | 9.33853 | 36 | 0.66147 | 9.98991 | 70 |
| 31 | 9.32879 | 35 | 9.33889 | 36 | 0.66111 | 9.98990 | 69 |
| 32 | 9.32914 | 34 | 9.33925 | 37 | 0.66075 | 9.98988 | 68 |
| 33 | 9.32948 | 35 | 9.33962 | 36 | 0.66038 | 9.98987 | 67 |
| 34 | 9.32983 | 35 | 9.33998 | 36 | 0.66002 | 9.98985 | 66 |
| 35 | 9.33018 | 34 | 9.34034 | 37 | 0.65966 | 9.98983 | 65 |
| 36 | 9.33052 | 35 | 9.34071 | 36 | 0.65929 | 9.98982 | 64 |
| 37 | 9.33087 | 34 | 9.34107 | 36 | 0.65893 | 9.98980 | 63 |
| 38 | 9.33121 | 35 | 9.34143 | 36 | 0.65857 | 9.98978 | 62 |
| 39 | 9.33156 | 34 | 9.34179 | 36 | 0.65821 | 9.98977 | 61 |
| 40 | 9.33190 | 35 | 9.34215 | 37 | 0.65785 | 9.98975 | 60 |
| 41 | 9.33225 | 34 | 9.34252 | 36 | 0.65748 | 9.98973 | 59 |
| 42 | 9.33259 | 35 | 9.34288 | 36 | 0.65712 | 9.98972 | 58 |
| 43 | 9.33294 | 34 | 9.34324 | 36 | 0.65676 | 9.98970 | 57 |
| 44 | 9.33328 | 34 | 9.34360 | 36 | 0.65640 | 9.98968 | 56 |
| 45 | 9.33362 | 35 | 9.34396 | 36 | 0.65604 | 9.98967 | 55 |
| 46 | 9.33397 | 34 | 9.34432 | 36 | 0.65568 | 9.98965 | 54 |
| 47 | 9.33431 | 34 | 9.34468 | 36 | 0.65532 | 9.98963 | 53 |
| 48 | 9.33465 | 34 | 9.34504 | 36 | 0.65496 | 9.98962 | 52 |
| 49 | 9.33499 | 35 | 9.34540 | 36 | 0.65460 | 9.98960 | 51 |
| 50 | 9.33534 | | 9.34576 | | 0.65424 | 9.98958 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 38 | 37 | 36 | 35 |
|---|---|---|---|---|
| 1 | 3.8 | 3.7 | 3.6 | 3.5 |
| 2 | 7.6 | 7.4 | 7.2 | 7.0 |
| 3 | 11.4 | 11.1 | 10.8 | 10.5 |
| 4 | 15.2 | 14.8 | 14.4 | 14.0 |
| 5 | 19.0 | 18.5 | 18.0 | 17.5 |
| 6 | 22.8 | 22.2 | 21.6 | 21.0 |
| 7 | 26.6 | 25.9 | 25.2 | 24.5 |
| 8 | 30.4 | 29.6 | 28.8 | 28.0 |
| 9 | 34.2 | 33.3 | 32.4 | 31.5 |

P. P.

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| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.33534 | 34 | 9.34576 | 35 | 0.65424 | 9.98958 | 50 |
| 51 | 9.33568 | 34 | 9.34611 | 36 | 0.65389 | 9.98956 | 49 |
| 52 | 9.33602 | 34 | 9.34647 | 36 | 0.65353 | 9.98955 | 48 |
| 53 | 9.33636 | 34 | 9.34683 | 36 | 0.65317 | 9.98953 | 47 |
| 54 | 9.33670 | 34 | 9.34719 | 36 | 0.65281 | 9.98951 | 46 |
| 55 | 9.33704 | 34 | 9.34755 | 35 | c.65245 | 9.98950 | 45 |
| 56 | 9.33738 | 34 | 9.34790 | 36 | 0.65210 | 9.98948 | 44 |
| 57 | 9.33772 | 34 | 9.34826 | 36 | 0.65174 | 9.98946 | 43 |
| 58 | 9.33806 | 34 | 9.34862 | 35 | 0.65138 | 9.98945 | 42 |
| 59 | 9.33840 | 34 | 9.34897 | 36 | 0.65103 | 9.98943 | 41 |
| 60 | 9.33874 | 34 | 9.34933 | 35 | 0.65067 | 9.98941 | 40 |
| 61 | 9.33908 | 34 | 9.34968 | 36 | 0.65032 | 9.98940 | 39 |
| 62 | 9.33942 | 34 | 9.35004 | 36 | 0.64996 | 9.98938 | 38 |
| 63 | 9.33976 | 34 | 9.35040 | 35 | 0.64960 | 9.98936 | 37 |
| 64 | 9.34010 | 33 | 9.35075 | 36 | 0.64925 | 9.98934 | 36 |
| 65 | 9.34043 | 34 | 9.35111 | 35 | 0.64889 | 9.98933 | 35 |
| 66 | 9.34077 | 34 | 9.35146 | 35 | 0.64854 | 9.98931 | 34 |
| 67 | 9.34111 | 34 | 9.35181 | 36 | 0.64819 | 9.98929 | 33 |
| 68 | 9.34145 | 33 | 9.35217 | 35 | 0.64783 | 9.98928 | 32 |
| 69 | 9.34178 | 34 | 9.35252 | 36 | 0.64748 | 9.98926 | 31 |
| 70 | 9.34212 | 34 | 9.35288 | 35 | 0.64712 | 9.98924 | 30 |
| 71 | 9.34246 | 33 | 9.35323 | 35 | 0.64677 | 9.98923 | 29 |
| 72 | 9.34279 | 34 | 9.35358 | 36 | 0.64642 | 9.98921 | 28 |
| 73 | 9.34313 | 33 | 9.35394 | 35 | 0.64606 | 9.98919 | 27 |
| 74 | 9.34346 | 34 | 9.35429 | 35 | 0.64571 | 9.98917 | 26 |
| 75 | 9.34380 | 33 | 9.35464 | 35 | 0.64536 | 9.98916 | 25 |
| 76 | 9.34413 | 34 | 9.35499 | 35 | 0.64501 | 9.98914 | 24 |
| 77 | 9.34447 | 33 | 9.35534 | 36 | 0.64466 | 9.98912 | 23 |
| 78 | 9.34480 | 34 | 9.35570 | 35 | 0.64430 | 9.98911 | 22 |
| 79 | 9.34514 | 33 | 9.35605 | 35 | 0.64395 | 9.98909 | 21 |
| 80 | 9.34547 | 33 | 9.35640 | 35 | 0.64360 | 9.98907 | 20 |
| 81 | 9.34580 | 34 | 9.35675 | 35 | 0.64325 | 9.98905 | 19 |
| 82 | 9.34614 | 33 | 9.35710 | 35 | 0.64290 | 9.98904 | 18 |
| 83 | 9.34647 | 33 | 9.35745 | 35 | 0.64255 | 9.98902 | 17 |
| 84 | 9.34680 | 33 | 9.35780 | 35 | 0.64220 | 9.98900 | 16 |
| 85 | 9.34713 | 34 | 9.35815 | 35 | 0.64185 | 9.98898 | 15 |
| 86 | 9.34747 | 33 | 9.35850 | 35 | 0.64150 | 9.98897 | 14 |
| 87 | 9.34780 | 33 | 9.35885 | 35 | 0.64115 | 9.98895 | 13 |
| 88 | 9.34813 | 33 | 9.35920 | 35 | 0.64080 | 9.98893 | 12 |
| 89 | 9.34846 | 33 | 9.35955 | 34 | 0.64045 | 9.98892 | 11 |
| 90 | 9.34879 | 33 | 9.35989 | 35 | 0.64011 | 9.98890 | 10 |
| 91 | 9.34912 | 33 | 9.36024 | 35 | 0.63976 | 9.98888 | 09 |
| 92 | 9.34945 | 33 | 9.36059 | 35 | 0.63941 | 9.98886 | 08 |
| 93 | 9.34978 | 33 | 9.36094 | 34 | 0.63906 | 9.98885 | 07 |
| 94 | 9.35011 | 33 | 9.36128 | 35 | 0.63872 | 9.98883 | 06 |
| 95 | 9.35044 | 33 | 9.36163 | 35 | 0.63837 | 9.98881 | 05 |
| 96 | 9.35077 | 33 | 9.36198 | 35 | 0.63802 | 9.98879 | 04 |
| 97 | 9.35110 | 33 | 9.36233 | 34 | 0.63767 | 9.98878 | 03 |
| 98 | 9.35143 | 33 | 9.36267 | 35 | 0.63733 | 9.98876 | 02 |
| 99 | 9.35176 | 33 | 9.36302 | 34 | 0.63698 | 9.98874 | 01 |
| 100 | 9.35209 | | 9.36336 | | 0.63664 | 9.98872 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 36 | 35 | 34 | 33 |
|---|---|---|---|---|
| 1 | 3.6 | 3.5 | 3.4 | 3.3 |
| 2 | 7.2 | 7.0 | 6.8 | 6.6 |
| 3 | 10.8 | 10.5 | 10.2 | 9.9 |
| 4 | 14.4 | 14.0 | 13.6 | 13.2 |
| 5 | 18.0 | 17.5 | 17.0 | 16.5 |
| 6 | 21.6 | 21.0 | 20.4 | 19.8 |
| 7 | 25.2 | 24.5 | 23.8 | 23.1 |
| 8 | 28.8 | 28.0 | 27.2 | 26.4 |
| 9 | 32.4 | 31.5 | 30.6 | 29.7 |

# 13°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.35209 | 33 | 9.36336 | 35 | 0.63664 | 9.98872 | 100 |
| 01 | 9.35242 | 32 | 9.36371 | 35 | 0.63629 | 9.98871 | 99 |
| 02 | 9.35274 | 33 | 9.36406 | 34 | 0.63594 | 9.98869 | 98 |
| 03 | 9.35307 | 33 | 9.36440 | 35 | 0.63560 | 9.98867 | 97 |
| 04 | 9.35340 | 33 | 9.36475 | 34 | 0.63525 | 9.98865 | 96 |
| 05 | 9.35373 | 32 | 9.36509 | 34 | 0.63491 | 9.98864 | 95 |
| 06 | 9.35405 | 33 | 9.36543 | 35 | 0.63457 | 9.98862 | 94 |
| 07 | 9.35438 | 33 | 9.36578 | 34 | 0.63422 | 9.98860 | 93 |
| 08 | 9.35471 | 32 | 9.36612 | 35 | 0.63388 | 9.98858 | 92 |
| 09 | 9.35503 | 33 | 9.36647 | 34 | 0.63353 | 9.98857 | 91 |
| 10 | 9.35536 | 32 | 9.36681 | 34 | 0.63319 | 9.98855 | 90 |
| 11 | 9.35568 | 33 | 9.36715 | 35 | 0.63285 | 9.98853 | 89 |
| 12 | 9.35601 | 32 | 9.36750 | 34 | 0.63250 | 9.98851 | 88 |
| 13 | 9.35633 | 33 | 9.36784 | 34 | 0.63216 | 9.98850 | 87 |
| 14 | 9.35666 | 32 | 9.36818 | 34 | 0.63182 | 9.98848 | 86 |
| 15 | 9.35698 | 33 | 9.36852 | 35 | 0.63148 | 9.98846 | 85 |
| 16 | 9.35731 | 32 | 9.36887 | 34 | 0.63113 | 9.98844 | 84 |
| 17 | 9.35763 | 33 | 9.36921 | 34 | 0.63079 | 9.98842 | 83 |
| 18 | 9.35796 | 32 | 9.36955 | 34 | 0.63045 | 9.98841 | 82 |
| 19 | 9.35828 | 32 | 9 36989 | 34 | 0.63011 | 9.98839 | 81 |
| 20 | 9.35860 | 33 | 9.37023 | 34 | 0.62977 | 9.98837 | 80 |
| 21 | 9.35893 | 32 | 9.37057 | 34 | 0.62943 | 9.98835 | 79 |
| 22 | 9.35925 | 32 | 9.37091 | 34 | 0.62909 | 9.98834 | 78 |
| 23 | 9.35957 | 32 | 9.37125 | 34 | 0.62875 | 9.98832 | 77 |
| 24 | 9.35989 | 33 | 9.37159 | 34 | 0.62841 | 9.98830 | 76 |
| 25 | 9.36022 | 32 | 9.37193 | 34 | 0.62807 | 9.98828 | 75 |
| 26 | 9.36054 | 32 | 9.37227 | 34 | 0.62773 | 9.98826 | 74 |
| 27 | 9.36086 | 32 | 9.37261 | 34 | 0.62739 | 9.98825 | 73 |
| 28 | 9.36118 | 32 | 9.37295 | 34 | 0.62705 | 9.98823 | 72 |
| 29 | 9.36150 | 32 | 9.37329 | 34 | 0.62671 | 9.98821 | 71 |
| 30 | 9.36182 | 32 | 9.37363 | 34 | 0.62637 | 9.98819 | 70 |
| 31 | 9.36214 | 32 | 9.37397 | 34 | 0.62603 | 9.98817 | 69 |
| 32 | 9.36246 | 32 | 9.37431 | 33 | 0.62569 | 9.98816 | 68 |
| 33 | 9.36278 | 32 | 9.37464 | 34 | 0.62536 | 9.98814 | 67 |
| 34 | 9.36310 | 32 | 9.37498 | 34 | 0.62502 | 9.98812 | 66 |
| 35 | 9.36342 | 32 | 9.37532 | 34 | 0.62468 | 9.98810 | 65 |
| 36 | 9.36374 | 32 | 9.37566 | 33 | 0.62434 | 9.98808 | 64 |
| 37 | 9.36406 | 32 | 9.37599 | 34 | 0.62401 | 9.98807 | 63 |
| 38 | 9.36438 | 32 | 9.37633 | 34 | 0.62367 | 9.98805 | 62 |
| 39 | 9.36470 | 32 | 9.37667 | 33 | 0.62333 | 9.98803 | 61 |
| 40 | 9.36502 | 31 | 9.37700 | 34 | 0.62300 | 9.98801 | 60 |
| 41 | 9.36533 | 32 | 9.37734 | 34 | 0.62266 | 9.98799 | 59 |
| 42 | 9.36565 | 32 | 9.37768 | 33 | 0.62232 | 9.98798 | 58 |
| 43 | 9.36597 | 32 | 9.37801 | 34 | 0.62199 | 9.98796 | 57 |
| 44 | 9.36629 | 31 | 9.37835 | 33 | 0.62165 | 9.98794 | 56 |
| 45 | 9.36660 | 32 | 9.37868 | 34 | 0.62132 | 9.98792 | 55 |
| 46 | 9.36692 | 32 | 9.37902 | 33 | 0.62098 | 9.98790 | 54 |
| 47 | 9.36724 | 31 | 9.37935 | 34 | 0.62065 | 9.98789 | 53 |
| 48 | 9.36755 | 32 | 9.37969 | 33 | 0.62031 | 9.98787 | 52 |
| 49 | 9.36787 | 32 | 9.38002 | 33 | 0.61998 | 9.98785 | 51 |
| 50 | 9.36819 | | 9.38035 | | 0.61965 | 9.98783 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 35 | 34 | 33 | 32 |
|---|---|---|---|---|
| 1 | 3.5 | 3.4 | 3.3 | 3.2 |
| 2 | 7.0 | 6.8 | 6.6 | 6.4 |
| 3 | 10.5 | 10.2 | 9.9 | 9.6 |
| 4 | 14.0 | 13.6 | 13.2 | 12.8 |
| 5 | 17.5 | 17.0 | 16.5 | 16.0 |
| 6 | 21.0 | 20.4 | 19.8 | 19.2 |
| 7 | 24.5 | 23.8 | 23.1 | 22.4 |
| 8 | 28.0 | 27.2 | 26.4 | 25.6 |
| 9 | 31.5 | 30.6 | 29.7 | 28.8 |

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| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.36819 | 31 | 9.38035 | 34 | 0.61965 | 9.98783 | 50 |
| 51 | 9.36850 | 32 | 9.38069 | 33 | 0.61931 | 9.98781 | 49 |
| 52 | 9.36882 | 31 | 9.38102 | 33 | 0.61898 | 9.98780 | 48 |
| 53 | 9.36913 | 32 | 9.38135 | 34 | 0.61865 | 9.98778 | 47 |
| 54 | 9.36945 | 31 | 9.38169 | 33 | 0.61831 | 9.98776 | 46 |
| 55 | 9.36976 | 32 | 9.38202 | 33 | 0.61798 | 9.98774 | 45 |
| 56 | 9.37008 | 31 | 9.38235 | 34 | 0.61765 | 9.98772 | 44 |
| 57 | 9.37039 | 31 | 9.38269 | 33 | 0.61731 | 9.98770 | 43 |
| 58 | 9.37070 | 32 | 9.38302 | 33 | 0.61698 | 9.98769 | 42 |
| 59 | 9.37102 | 31 | 9.38335 | 33 | 0.61665 | 9.98767 | 41 |
| 60 | 9.37133 | 31 | 9.38368 | 33 | 0.61632 | 9.98765 | 40 |
| 61 | 9.37164 | 32 | 9.38401 | 33 | 0.61599 | 9.98763 | 39 |
| 62 | 9.37196 | 31 | 9.38434 | 34 | 0.61566 | 9.98761 | 38 |
| 63 | 9.37227 | 31 | 9.38468 | 33 | 0.61532 | 9.98759 | 37 |
| 64 | 9.37258 | 31 | 9.38501 | 33 | 0.61499 | 9.98758 | 36 |
| 65 | 9.37289 | 32 | 9.38534 | 33 | 0.61466 | 9.98756 | 35 |
| 66 | 9.37321 | 31 | 9.38567 | 33 | 0.61433 | 9.98754 | 34 |
| 67 | 9.37352 | 31 | 9.38600 | 33 | 0.61400 | 9.98752 | 33 |
| 68 | 9.37383 | 31 | 9.38633 | 33 | 0.61367 | 9.98750 | 32 |
| 69 | 9.37414 | 31 | 9.38666 | 33 | 0.61334 | 9.98748 | 31 |
| 70 | 9.37445 | 31 | 9.38699 | 33 | 0.61301 | 9.98746 | 30 |
| 71 | 9.37476 | 31 | 9.38732 | 33 | 0.61268 | 9.98745 | 29 |
| 72 | 9.37507 | 31 | 9.38765 | 32 | 0.61235 | 9.98743 | 28 |
| 73 | 9.37538 | 31 | 9.38797 | 33 | 0.61203 | 9.98741 | 27 |
| 74 | 9.37569 | 31 | 9.38830 | 33 | 0.61170 | 9.98739 | 26 |
| 75 | 9.37600 | 31 | 9.38863 | 33 | 0.61137 | 9.98737 | 25 |
| 76 | 9.37631 | 31 | 9.38896 | 33 | 0.61104 | 9.98735 | 24 |
| 77 | 9.37662 | 31 | 9.38929 | 33 | 0.61071 | 9.98734 | 23 |
| 78 | 9.37693 | 31 | 9.38962 | 32 | 0.61038 | 9.98732 | 22 |
| 79 | 9.37724 | 31 | 9.38994 | 33 | 0.61006 | 9.98730 | 21 |
| 80 | 9.37755 | 31 | 9.39027 | 33 | 0.60973 | 9.98728 | 20 |
| 81 | 9.37786 | 31 | 9.39060 | 32 | 0.60940 | 9.98726 | 19 |
| 82 | 9.37817 | 30 | 9.39092 | 33 | 0.60908 | 9.98724 | 18 |
| 83 | 9.37847 | 31 | 9.39125 | 33 | 0.60875 | 9.98722 | 17 |
| 84 | 9.37878 | 31 | 9.39158 | 32 | 0.60842 | 9.98720 | 16 |
| 85 | 9.37909 | 31 | 9.39190 | 33 | 0.60810 | 9.98719 | 15 |
| 86 | 9.37940 | 30 | 9.39223 | 33 | 0.60777 | 9.98717 | 14 |
| 87 | 9.37970 | 31 | 9.39256 | 32 | 0.60744 | 9.98715 | 13 |
| 88 | 9.38001 | 31 | 9.39288 | 33 | 0.60712 | 9.98713 | 12 |
| 89 | 9.38032 | 30 | 9.39321 | 32 | 0.60679 | 9.98711 | 11 |
| 90 | 9.38062 | 31 | 9.39353 | 33 | 0.60647 | 9.98709 | 10 |
| 91 | 9.38093 | 31 | 9.39386 | 32 | 0.60614 | 9.98707 | 09 |
| 92 | 9.38124 | 30 | 9.39418 | 33 | 0.60582 | 9.98705 | 08 |
| 93 | 9.38154 | 31 | 9.39451 | 32 | 0.60549 | 9.98704 | 07 |
| 94 | 9.38185 | 30 | 9.39483 | 32 | 0.60517 | 9.98702 | 06 |
| 95 | 9.38215 | 31 | 9.39515 | 33 | 0.60485 | 9.98700 | 05 |
| 96 | 9.38246 | 30 | 9.39548 | 32 | 0.60452 | 9.98698 | 04 |
| 97 | 9.38276 | 31 | 9.39580 | 32 | 0.60420 | 9.98696 | 03 |
| 98 | 9.38307 | 30 | 9.39612 | 33 | 0.60388 | 9.98694 | 02 |
| 99 | 9.38337 | 31 | 9.39645 | 32 | 0.60355 | 9.98692 | 01 |
| 100 | 9.38368 | | 9.39677 | | 0.60323 | 9.98690 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 33 | 32 | 31 | 30 |
|---|---|---|---|---|
| 1 | 3.3 | 3.2 | 3.1 | 3.0 |
| 2 | 6.6 | 6.4 | 6.2 | 6.0 |
| 3 | 9.9 | 9.6 | 9.3 | 9.0 |
| 4 | 13.2 | 12.8 | 12.4 | 12.0 |
| 5 | 16.5 | 16.0 | 15.5 | 15.0 |
| 6 | 19.8 | 19.2 | 18.6 | 18.0 |
| 7 | 23.1 | 22.4 | 21.7 | 21.0 |
| 8 | 26.4 | 25.6 | 24.8 | 24.0 |
| 9 | 29.7 | 28.8 | 27.9 | 27.0 |

# 14°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.38368 | 30 | 9.39677 | 32 | 0.60323 | 9.98690 | 100 |
| 01 | 9.38398 | 30 | 9.39709 | 33 | 0.60291 | 9.98689 | 99 |
| 02 | 9.38428 | 31 | 9.39742 | 32 | 0.60258 | 9.98687 | 98 |
| 03 | 9.38459 | 30 | 9.39774 | 32 | 0.60226 | 9.98685 | 97 |
| 04 | 9.38489 | 30 | 9.39806 | 32 | 0.60194 | 9.98683 | 96 |
| 05 | 9.38519 | 31 | 9.39838 | 32 | 0.60162 | 9.98681 | 95 |
| 06 | 9.38550 | 30 | 9.39870 | 33 | 0.60130 | 9.98679 | 94 |
| 07 | 9.38580 | 30 | 9.39903 | 32 | 0.60097 | 9.98677 | 93 |
| 08 | 9.38610 | 30 | 9.39935 | 32 | 0.60065 | 9.98675 | 92 |
| 09 | 9.38640 | 30 | 9.39967 | 32 | 0.60033 | 9.98673 | 91 |
| 10 | 9.38670 | 31 | 9.39999 | 32 | 0.60001 | 9.98671 | 90 |
| 11 | 9.38701 | 30 | 9.40031 | 32 | 0.59969 | 9.98670 | 89 |
| 12 | 9.38731 | 30 | 9.40063 | 32 | 0.59937 | 9.98668 | 88 |
| 13 | 9.38761 | 30 | 9.40095 | 32 | 0.59905 | 9.98666 | 87 |
| 14 | 9.38791 | 30 | 9.40127 | 32 | 0.59873 | 9.98664 | 86 |
| 15 | 9.38821 | 30 | 9.40159 | 32 | 0.59841 | 9.98662 | 85 |
| 16 | 9.38851 | 30 | 9.40191 | 32 | 0.59809 | 9.98660 | 84 |
| 17 | 9.38881 | 30 | 9.40223 | 32 | 0.59777 | 9.98658 | 83 |
| 18 | 9.38911 | 30 | 9.40255 | 32 | 0.59745 | 9.98656 | 82 |
| 19 | 9.38941 | 30 | 9.40287 | 32 | 0.59713 | 9.98654 | 81 |
| 20 | 9.38971 | 30 | 9.40319 | 32 | 0.59681 | 9.98652 | 80 |
| 21 | 9.39001 | 30 | 9.40351 | 31 | 0.59649 | 9.98650 | 79 |
| 22 | 9.39031 | 30 | 9.40382 | 32 | 0.59618 | 9.98648 | 78 |
| 23 | 9.39061 | 30 | 9.40414 | 32 | 0.59586 | 9.98647 | 77 |
| 24 | 9.39091 | 30 | 9.40446 | 32 | 0.59554 | 9.98645 | 76 |
| 25 | 9.39121 | 29 | 9.40478 | 32 | 0.59522 | 9.98643 | 75 |
| 26 | 9.39150 | 30 | 9.40510 | 31 | 0.59490 | 9.98641 | 74 |
| 27 | 9.39180 | 30 | 9.40541 | 32 | 0.59459 | 9.98639 | 73 |
| 28 | 9.39210 | 30 | 9.40573 | 32 | 0.59427 | 9.98637 | 72 |
| 29 | 9.39240 | 30 | 9.40605 | 31 | 0.59395 | 9.98635 | 71 |
| 30 | 9.39270 | 29 | 9.40636 | 32 | 0.59364 | 9.98633 | 70 |
| 31 | 9.39299 | 30 | 9.40668 | 32 | 0.59332 | 9.98631 | 69 |
| 32 | 9.39329 | 30 | 9.40700 | 31 | 0.59300 | 9.98629 | 68 |
| 33 | 9.39359 | 29 | 9.40731 | 32 | 0.59269 | 9.98627 | 67 |
| 34 | 9.39388 | 30 | 9.40763 | 32 | 0.59237 | 9.98625 | 66 |
| 35 | 9.39418 | 30 | 9.40795 | 31 | 0.59205 | 9.98623 | 65 |
| 36 | 9.39448 | 29 | 9.40826 | 32 | 0.59174 | 9.98621 | 64 |
| 37 | 9.39477 | 30 | 9.40858 | 31 | 0.59142 | 9.98620 | 63 |
| 38 | 9.39507 | 29 | 9.40889 | 32 | 0.59111 | 9.98618 | 62 |
| 39 | 9.39536 | 30 | 9.40921 | 31 | 0.59079 | 9.98616 | 61 |
| 40 | 9.39566 | 29 | 9.40952 | 32 | 0.59048 | 9.98614 | 60 |
| 41 | 9.39595 | 30 | 9.40984 | 31 | 0.59016 | 9.98612 | 59 |
| 42 | 9.39625 | 29 | 9.41015 | 31 | 0.58985 | 9.98610 | 58 |
| 43 | 9.39654 | 30 | 9.41046 | 32 | 0.58954 | 9.98608 | 57 |
| 44 | 9.39684 | 29 | 9.41078 | 31 | 0.58922 | 9.98606 | 56 |
| 45 | 9.39713 | 30 | 9.41109 | 32 | 0.58891 | 9.98604 | 55 |
| 46 | 9.39743 | 29 | 9.41141 | 31 | 0.58859 | 9.98602 | 54 |
| 47 | 9.39772 | 29 | 9.41172 | 31 | 0.58828 | 9.98600 | 53 |
| 48 | 9.39801 | 30 | 9.41203 | 32 | 0.58797 | 9.98598 | 52 |
| 49 | 9.39831 | 29 | 9.41235 | 31 | 0.58765 | 9.98596 | 51 |
| 50 | 9.39860 | | 9.41266 | | 0.58734 | 9.98594 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 33 | 32 | 31 | 30 |
|---|---|---|---|---|
| 1 | 3.3 | 3.2 | 3.1 | 3.0 |
| 2 | 6.6 | 6.4 | 6.2 | 6.0 |
| 3 | 9.9 | 9.6 | 9.3 | 9.0 |
| 4 | 13.2 | 12.8 | 12.4 | 12.0 |
| 5 | 16.5 | 16.0 | 15.5 | 15.0 |
| 6 | 19.8 | 19.2 | 18.6 | 18.0 |
| 7 | 23.1 | 22.4 | 21.7 | 21.0 |
| 8 | 26.4 | 25.6 | 24.8 | 24.0 |
| 9 | 29.7 | 28.8 | 27.9 | 27.0 |

# 75°

| | Sin. | d. | Tang. | d. c | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.39860 | 29 | 9.41266 | 31 | 0.58734 | 9.98594 | 50 |
| 51 | 9.39889 | 30 | 9.41297 | 31 | 0.58703 | 9.98592 | 49 |
| 52 | 9.39919 | 29 | 9.41328 | 32 | 0.58672 | 9.98590 | 48 |
| 53 | 9.39948 | 29 | 9.41360 | 31 | 0.58640 | 9.98588 | 47 |
| 54 | 9.39977 | 29 | 9.41391 | 31 | 0.58609 | 9.98586 | 46 |
| 55 | 9.40006 | 29 | 9.41422 | 31 | 0.58578 | 9.98584 | 45 |
| 56 | 9.40035 | 30 | 9.41453 | 31 | 0.58547 | 9.98582 | 44 |
| 57 | 9.40065 | 29 | 9.41484 | 31 | 0.58516 | 9.98580 | 43 |
| 58 | 9.40094 | 29 | 9.41515 | 31 | 0.58485 | 9.98578 | 42 |
| 59 | 9.40123 | 29 | 9.41546 | 32 | 0.58454 | 9.98576 | 41 |
| 60 | 9.40152 | 29 | 9.41578 | 31 | 0.58422 | 9.98574 | 40 |
| 61 | 9.40181 | 29 | 9.41609 | 31 | 0.58391 | 9.98573 | 39 |
| 62 | 9.40210 | 29 | 9.41640 | 31 | 0.58360 | 9.98571 | 38 |
| 63 | 9.40239 | 29 | 9.41671 | 31 | 0.58329 | 9.98569 | 37 |
| 64 | 9.40268 | 29 | 9.41702 | 31 | 0.58298 | 9.98567 | 36 |
| 65 | 9.40297 | 29 | 9.41733 | 31 | 0.58267 | 9.98565 | 35 |
| 66 | 9.40326 | 29 | 9.41764 | 31 | 0.58236 | 9.98563 | 34 |
| 67 | 9.40355 | 29 | 9.41795 | 30 | 0.58205 | 9.98561 | 33 |
| 68 | 9.40384 | 29 | 9.41825 | 31 | 0.58175 | 9.98559 | 32 |
| 69 | 9.40413 | 29 | 9.41856 | 31 | 0.58144 | 9.98557 | 31 |
| 70 | 9.40442 | 29 | 9.41887 | 31 | 0.58113 | 9.98555 | 30 |
| 71 | 9.40471 | 29 | 9.41918 | 31 | 0.58082 | 9.98553 | 29 |
| 72 | 9.40500 | 29 | 9.41949 | 31 | 0.58051 | 9.98551 | 28 |
| 73 | 9.40529 | 28 | 9.41980 | 31 | 0.58020 | 9.98549 | 27 |
| 74 | 9.40557 | 29 | 9.42011 | 30 | 0.57989 | 9.98547 | 26 |
| 75 | 9.40586 | 29 | 9.42041 | 31 | 0.57959 | 9.98545 | 25 |
| 76 | 9.40615 | 29 | 9.42072 | 31 | 0.57928 | 9.98543 | 24 |
| 77 | 9.40644 | 28 | 9.42103 | 31 | 0.57897 | 9.98541 | 23 |
| 78 | 9.40672 | 29 | 9.42134 | 30 | 0.57866 | 9.98539 | 22 |
| 79 | 9.40701 | 29 | 9.42164 | 31 | 0.57836 | 9.98537 | 21 |
| 80 | 9.40730 | 29 | 9.42195 | 31 | 0.57805 | 9.98535 | 20 |
| 81 | 9.40759 | 28 | 9.42226 | 30 | 0.57774 | 9.98533 | 19 |
| 82 | 9.40787 | 29 | 9.42256 | 31 | 0.57744 | 9.98531 | 18 |
| 83 | 9.40816 | 28 | 9.42287 | 31 | 0.57713 | 9.98529 | 17 |
| 84 | 9.40844 | 29 | 9.42318 | 30 | 0.57682 | 9.98527 | 16 |
| 85 | 9.40873 | 29 | 9.42348 | 31 | 0.57652 | 9.98525 | 15 |
| 86 | 9.40902 | 28 | 9.42379 | 31 | 0.57621 | 9.98523 | 14 |
| 87 | 9.40930 | 29 | 9.42410 | 30 | 0.57590 | 9.98521 | 13 |
| 88 | 9.40959 | 28 | 9.42440 | 31 | 0.57560 | 9.98519 | 12 |
| 89 | 9.40987 | 29 | 9.42471 | 30 | 0.57529 | 9.98517 | 11 |
| 90 | 9.41016 | 28 | 9.42501 | 31 | 0.57499 | 9.98515 | 10 |
| 91 | 9.41044 | 29 | 9.42532 | 30 | 0.57468 | 9.98513 | 09 |
| 92 | 9.41073 | 28 | 9.42562 | 31 | 0.57438 | 9.98511 | 08 |
| 93 | 9.41101 | 29 | 9.42593 | 30 | 0.57407 | 9.98509 | 07 |
| 94 | 9.41130 | 28 | 9.42623 | 30 | 0.57377 | 9.98507 | 06 |
| 95 | 9.41158 | 28 | 9.42653 | 31 | 0.57347 | 9.98505 | 05 |
| 96 | 9.41186 | 29 | 9.42684 | 30 | 0.57316 | 9.98502 | 04 |
| 97 | 9.41215 | 28 | 9.42714 | 31 | 0.57286 | 9.98500 | 03 |
| 98 | 9.41243 | 28 | 9.42745 | 30 | 0.57255 | 9.98498 | 02 |
| 99 | 9.41271 | 29 | 9.42775 | 30 | 0.57225 | 9.98496 | 01 |
| 100 | 9.41300 | | 9.42805 | | 0.57195 | 9.98494 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| 31 | |
|---|---|
| 1 | 3.1 |
| 2 | 6.2 |
| 3 | 9.3 |
| 4 | 12.4 |
| 5 | 15.5 |
| 6 | 18.6 |
| 7 | 21.7 |
| 8 | 24.8 |
| 9 | 27.9 |

| 30 | |
|---|---|
| 1 | 3.0 |
| 2 | 6.0 |
| 3 | 9.0 |
| 4 | 12.0 |
| 5 | 15.0 |
| 6 | 18.0 |
| 7 | 21.0 |
| 8 | 24.0 |
| 9 | 27.0 |

| 29 | |
|---|---|
| 1 | 2.9 |
| 2 | 5.8 |
| 3 | 8.7 |
| 4 | 11.6 |
| 5 | 14.5 |
| 6 | 17.4 |
| 7 | 20.3 |
| 8 | 23.2 |
| 9 | 26.1 |

| 28 | |
|---|---|
| 1 | 2.8 |
| 2 | 5.6 |
| 3 | 8.4 |
| 4 | 11.2 |
| 5 | 14.0 |
| 6 | 16.8 |
| 7 | 19.6 |
| 8 | 22.4 |
| 9 | 25.2 |

# 15°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.41300 | 28 | 9.42805 | 31 | 0.57195 | 9.98494 | 100 |
| 01 | 9.41328 | 28 | 9.42836 | 30 | 0.57164 | 9.98492 | 99 |
| 02 | 9.41356 | 28 | 9.42866 | 30 | 0.57134 | 9.98490 | 98 |
| 03 | 9.41384 | 29 | 9.42896 | 30 | 0.57104 | 9.98488 | 97 |
| 04 | 9.41413 | 28 | 9.42926 | 31 | 0.57074 | 9.98486 | 96 |
| 05 | 9.41441 | 28 | 9.42957 | 30 | 0.57043 | 9.98484 | 95 |
| 06 | 9.41469 | 28 | 9.42987 | 30 | 0.57013 | 9.98482 | 94 |
| 07 | 9.41497 | 28 | 9.43017 | 30 | 0.56983 | 9.98480 | 93 |
| 08 | 9.41525 | 28 | 9.43047 | 30 | 0.56953 | 9.98478 | 92 |
| 09 | 9.41553 | 29 | 9.43077 | 31 | 0.56923 | 9.98476 | 91 |
| 10 | 9.41582 | 28 | 9.43108 | 30 | 0.56892 | 9.98474 | 90 |
| 11 | 9.41610 | 28 | 9.43138 | 30 | 0.56862 | 9.98472 | 89 |
| 12 | 9.41638 | 28 | 9.43168 | 30 | 0.56832 | 9.98470 | 88 |
| 13 | 9.41666 | 28 | 9.43198 | 30 | 0.56802 | 9.98468 | 87 |
| 14 | 9.41694 | 28 | 9.43228 | 30 | 0.56772 | 9.98466 | 86 |
| 15 | 9.41722 | 28 | 9.43258 | 30 | 0.56742 | 9.98464 | 85 |
| 16 | 9.41750 | 28 | 9.43288 | 30 | 0.56712 | 9.98462 | 84 |
| 17 | 9.41778 | 28 | 9.43318 | 30 | 0.56682 | 9.98460 | 83 |
| 18 | 9.41806 | 28 | 9.43348 | 30 | 0.56652 | 9.98458 | 82 |
| 19 | 9.41834 | 27 | 9.43378 | 30 | 0.56622 | 9.98456 | 81 |
| 20 | 9.41861 | 28 | 9.43408 | 30 | 0.56592 | 9.98453 | 80 |
| 21 | 9.41889 | 28 | 9.43438 | 30 | 0.56562 | 9.98451 | 79 |
| 22 | 9.41917 | 28 | 9.43468 | 30 | 0.56532 | 9.98449 | 78 |
| 23 | 9.41945 | 28 | 9.43498 | 30 | 0.56502 | 9.98447 | 77 |
| 24 | 9.41973 | 28 | 9.43528 | 30 | 0.56472 | 9.98445 | 76 |
| 25 | 9.42001 | 28 | 9.43558 | 29 | 0.56442 | 9.98443 | 75 |
| 26 | 9.42029 | 27 | 9.43587 | 30 | 0.56413 | 9.98441 | 74 |
| 27 | 9.42056 | 28 | 9.43617 | 30 | 0.56383 | 9.98439 | 73 |
| 28 | 9.42084 | 28 | 9.43647 | 30 | 0.56353 | 9.98437 | 72 |
| 29 | 9.42112 | 28 | 9.43677 | 30 | 0.56323 | 9.98435 | 71 |
| 30 | 9.42140 | 27 | 9.43707 | 29 | 0.56293 | 9.98433 | 70 |
| 31 | 9.42167 | 28 | 9.43736 | 30 | 0.56264 | 9.98431 | 69 |
| 32 | 9.42195 | 28 | 9.43766 | 30 | 0.56234 | 9.98429 | 68 |
| 33 | 9.42223 | 27 | 9.43796 | 30 | 0.56204 | 9.98427 | 67 |
| 34 | 9.42250 | 28 | 9.43826 | 29 | 0.56174 | 9.98425 | 66 |
| 35 | 9.42278 | 27 | 9.43855 | 30 | 0.56145 | 9.98422 | 65 |
| 36 | 9.42305 | 28 | 9.43885 | 30 | 0.56115 | 9.98420 | 64 |
| 37 | 9.42333 | 28 | 9.43915 | 29 | 0.56085 | 9.98418 | 63 |
| 38 | 9.42361 | 27 | 9.43944 | 30 | 0.56056 | 9.98416 | 62 |
| 39 | 9.42388 | 28 | 9.43974 | 30 | 0.56026 | 9.98414 | 61 |
| 40 | 9.42416 | 27 | 9.44004 | 29 | 0.55996 | 9.98412 | 60 |
| 41 | 9.42443 | 28 | 9.44033 | 30 | 0.55967 | 9.98410 | 59 |
| 42 | 9.42471 | 27 | 9.44063 | 29 | 0.55937 | 9.98408 | 58 |
| 43 | 9.42498 | 28 | 9.44092 | 30 | 0.55908 | 9.98406 | 57 |
| 44 | 9.42526 | 27 | 9.44122 | 29 | 0.55878 | 9.98404 | 56 |
| 45 | 9.42553 | 27 | 9.44151 | 30 | 0.55849 | 9.98402 | 55 |
| 46 | 9.42580 | 28 | 9.44181 | 29 | 0.55819 | 9.98399 | 54 |
| 47 | 9.42608 | 27 | 9.44210 | 30 | 0.55790 | 9.98397 | 53 |
| 48 | 9.42635 | 28 | 9.44240 | 29 | 0.55760 | 9.98395 | 52 |
| 49 | 9.42663 | 27 | 9.44269 | 30 | 0.55731 | 9.98393 | 51 |
| 50 | 9.42690 | | 9.44299 | | 0.55701 | 9.98391 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 31 |
|---|---|
| 1 | 3.1 |
| 2 | 6.2 |
| 3 | 9.3 |
| 4 | 12.4 |
| 5 | 15.5 |
| 6 | 18.6 |
| 7 | 21.7 |
| 8 | 24.8 |
| 9 | 27.9 |

| | 30 |
|---|---|
| 1 | 3.0 |
| 2 | 6.0 |
| 3 | 9.0 |
| 4 | 12.0 |
| 5 | 15.0 |
| 6 | 18.0 |
| 7 | 21.0 |
| 8 | 24.0 |
| 9 | 27.0 |

| | 29 |
|---|---|
| 1 | 2.9 |
| 2 | 5.8 |
| 3 | 8.7 |
| 4 | 11.6 |
| 5 | 14.5 |
| 6 | 17.4 |
| 7 | 20.3 |
| 8 | 23.2 |
| 9 | 26.1 |

| | 28 |
|---|---|
| 1 | 2.8 |
| 2 | 5.6 |
| 3 | 8.4 |
| 4 | 11.2 |
| 5 | 14.0 |
| 6 | 16.8 |
| 7 | 19.6 |
| 8 | 22.4 |
| 9 | 25.2 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.42690 | 27 | 9.44299 | 29 | 0.55701 | 9.98391 | 50 |
| 51 | 9.42717 | 28 | 9.44328 | 30 | 0.55672 | 9.98389 | 49 |
| 52 | 9.42745 | 27 | 9.44358 | 29 | 0.55642 | 9.98387 | 48 |
| 53 | 9.42772 | 27 | 9.44387 | 29 | 0.55613 | 9.98385 | 47 |
| 54 | 9.42799 | 27 | 9.44416 | 30 | 0.55584 | 9.98383 | 46 |
| 55 | 9.42826 | 28 | 9.44446 | 29 | 0.55554 | 9.98381 | 45 |
| 56 | 9.42854 | 27 | 9.44475 | 29 | 0.55525 | 9.98378 | 44 |
| 57 | 9.42881 | 27 | 9.44504 | 30 | 0.55496 | 9.98376 | 43 |
| 58 | 9.42908 | 27 | 9.44534 | 29 | 0.55466 | 9.98374 | 42 |
| 59 | 9.42935 | 27 | 9.44563 | 29 | 0.55437 | 9.98372 | 41 |
| 60 | 9.42962 | 27 | 9.44592 | 30 | 0.55408 | 9.98370 | 40 |
| 61 | 9.42989 | 28 | 9.44622 | 29 | 0.55378 | 9.98368 | 39 |
| 62 | 9.43017 | 27 | 9.44651 | 29 | 0.55349 | 9.98366 | 38 |
| 63 | 9.43044 | 27 | 9.44680 | 29 | 0.55320 | 9.98364 | 37 |
| 64 | 9.43071 | 27 | 9.44709 | 29 | 0.55291 | 9.98361 | 36 |
| 65 | 9.43098 | 27 | 9.44738 | 30 | 0.55262 | 9.98359 | 35 |
| 66 | 9.43125 | 27 | 9.44768 | 29 | 0.55232 | 9.98357 | 34 |
| 67 | 9.43152 | 27 | 9.44797 | 29 | 0.55203 | 9.98355 | 33 |
| 68 | 9.43179 | 27 | 9.44826 | 29 | 0.55174 | 9.98353 | 32 |
| 69 | 9.43206 | 27 | 9.44855 | 29 | 0.55145 | 9.98351 | 31 |
| 70 | 9.43233 | 27 | 9.44884 | 29 | 0.55116 | 9.98349 | 30 |
| 71 | 9.43260 | 27 | 9.44913 | 29 | 0.55087 | 9.98347 | 29 |
| 72 | 9.43287 | 27 | 9.44942 | 29 | 0.55058 | 9.98344 | 28 |
| 73 | 9.43314 | 27 | 9.44971 | 29 | 0.55029 | 9.98342 | 27 |
| 74 | 9.43341 | 26 | 9.45000 | 29 | 0.55000 | 9.98340 | 26 |
| 75 | 9.43367 | 27 | 9.45029 | 29 | 0.54971 | 9.98338 | 25 |
| 76 | 9.43394 | 27 | 9.45058 | 29 | 0.54942 | 9.98336 | 24 |
| 77 | 9.43421 | 27 | 9.45087 | 29 | 0.54913 | 9.98334 | 23 |
| 78 | 9.43448 | 27 | 9.45116 | 29 | 0.54884 | 9.98332 | 22 |
| 79 | 9.43475 | 27 | 9.45145 | 29 | 0.54855 | 9.98329 | 21 |
| 80 | 9.43502 | 26 | 9.45174 | 29 | 0.54826 | 9.98327 | 20 |
| 81 | 9.43528 | 27 | 9.45203 | 29 | 0.54797 | 9.98325 | 19 |
| 82 | 9.43555 | 27 | 9.45232 | 29 | 0.54768 | 9.98323 | 18 |
| 83 | 9.43582 | 27 | 9.45261 | 29 | 0.54739 | 9.98321 | 17 |
| 84 | 9.43609 | 26 | 9.45290 | 29 | 0.54710 | 9.98319 | 16 |
| 85 | 9.43635 | 27 | 9.45319 | 29 | 0.54681 | 9.98317 | 15 |
| 86 | 9.43662 | 27 | 9.45348 | 28 | 0.54652 | 9.98314 | 14 |
| 87 | 9.43689 | 26 | 9.45376 | 29 | 0.54624 | 9.98312 | 13 |
| 88 | 9.43715 | 27 | 9.45405 | 29 | 0.54595 | 9.98310 | 12 |
| 89 | 9.43742 | 27 | 9.45434 | 29 | 0.54566 | 9.98308 | 11 |
| 90 | 9.43769 | 26 | 9.45463 | 29 | 0.54537 | 9.98306 | 10 |
| 91 | 9.43795 | 27 | 9.45492 | 28 | 0.54508 | 9.98304 | 09 |
| 92 | 9.43822 | 26 | 9.45520 | 29 | 0.54480 | 9.98302 | 08 |
| 93 | 9.43848 | 27 | 9.45549 | 29 | 0.54451 | 9.98299 | 07 |
| 94 | 9.43875 | 26 | 9.45578 | 28 | 0.54422 | 9.98297 | 06 |
| 95 | 9.43901 | 27 | 9.45606 | 29 | 0.54394 | 9.98295 | 05 |
| 96 | 9.43928 | 26 | 9.45635 | 29 | 0.54365 | 9.98293 | 04 |
| 97 | 9.43954 | 27 | 9.45664 | 28 | 0.54336 | 9.98291 | 03 |
| 98 | 9.43981 | 26 | 9.45692 | 29 | 0.54308 | 9.98289 | 02 |
| 99 | 9.44007 | 27 | 9.45721 | 29 | 0.54279 | 9.98286 | 01 |
| 100 | 9.44034 | | 9.45750 | | 0.54250 | 9.98284 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 29 |
|---|---|
| 1 | 2.9 |
| 2 | 5.8 |
| 3 | 8.7 |
| 4 | 11.6 |
| 5 | 14.5 |
| 6 | 17.4 |
| 7 | 20.3 |
| 8 | 23.2 |
| 9 | 26.1 |

| | 28 |
|---|---|
| 1 | 2.8 |
| 2 | 5.6 |
| 3 | 8.4 |
| 4 | 11.2 |
| 5 | 14.0 |
| 6 | 16.8 |
| 7 | 19.6 |
| 8 | 22.4 |
| 9 | 25.2 |

| | 27 |
|---|---|
| 1 | 2.7 |
| 2 | 5.4 |
| 3 | 8.1 |
| 4 | 10.8 |
| 5 | 13.5 |
| 6 | 16.2 |
| 7 | 18.9 |
| 8 | 21.6 |
| 9 | 24.3 |

| | 26 |
|---|---|
| 1 | 2.6 |
| 2 | 5.2 |
| 3 | 7.8 |
| 4 | 10.4 |
| 5 | 13.0 |
| 6 | 15.6 |
| 7 | 18.2 |
| 8 | 20.8 |
| 9 | 23.4 |

P. P.

# 16°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.44034 | 26 | 9.45750 | 28 | 0.54250 | 9.98284 | 100 |
| 01 | 9.44060 | 27 | 9.45778 | 29 | 0.54222 | 9.98282 | 99 |
| 02 | 9.44087 | 26 | 9.45807 | 28 | 0.54193 | 9.98280 | 98 |
| 03 | 9.44113 | 26 | 9.45835 | 29 | 0.54165 | 9.98278 | 97 |
| 04 | 9.44139 | 27 | 9.45864 | 28 | 0.54136 | 9.98275 | 96 |
| 05 | 9.44166 | 26 | 9.45892 | 29 | 0.54108 | 9.98273 | 95 |
| 06 | 9.44192 | 26 | 9.45921 | 29 | 0.54079 | 9.98271 | 94 |
| 07 | 9.44218 | 27 | 9.45950 | 28 | 0.54050 | 9.98269 | 93 |
| 08 | 9.44245 | 26 | 9.45978 | 28 | 0.54022 | 9.98267 | 92 |
| 09 | 9.44271 | 26 | 9.46006 | 29 | 0.53994 | 9.98265 | 91 |
| 10 | 9.44297 | 27 | 9.46035 | 28 | 0.53965 | 9.98262 | 90 |
| 11 | 9.44324 | 26 | 9.46063 | 29 | 0.53937 | 9.98260 | 89 |
| 12 | 9.44350 | 26 | 9.46092 | 28 | 0.53908 | 9.98258 | 88 |
| 13 | 9.44376 | 26 | 9.46120 | 29 | 0.53880 | 9.98256 | 87 |
| 14 | 9.44402 | 26 | 9.46149 | 28 | 0.53851 | 9.98254 | 86 |
| 15 | 9.44428 | 27 | 9.46177 | 28 | 0.53823 | 9.98251 | 85 |
| 16 | 9.44455 | 26 | 9.46205 | 29 | 0.53795 | 9.98249 | 84 |
| 17 | 9.44481 | 26 | 9.46234 | 28 | 0.53766 | 9.98247 | 83 |
| 18 | 9.44507 | 26 | 9.46262 | 28 | 0.53738 | 9.98245 | 82 |
| 19 | 9.44533 | 26 | 9.46290 | 29 | 0.53710 | 9.98243 | 81 |
| 20 | 9.44559 | 26 | 9.46319 | 28 | 0.53681 | 9.98240 | 80 |
| 21 | 9.44585 | 26 | 9.46347 | 28 | 0.53653 | 9.98238 | 79 |
| 22 | 9.44611 | 26 | 9.46375 | 28 | 0.53625 | 9.98236 | 78 |
| 23 | 9.44637 | 26 | 9.46403 | 29 | 0.53597 | 9.98234 | 77 |
| 24 | 9.44663 | 26 | 9.46432 | 28 | 0.53568 | 9.98232 | 76 |
| 25 | 9.44689 | 26 | 9.46460 | 28 | 0.53540 | 9.98229 | 75 |
| 26 | 9.44715 | 26 | 9.46488 | 28 | 0.53512 | 9.98227 | 74 |
| 27 | 9.44741 | 26 | 9.46516 | 28 | 0.53484 | 9.98225 | 73 |
| 28 | 9.44767 | 26 | 9.46544 | 27 | 0.53456 | 9.98223 | 72 |
| 29 | 9.44793 | 26 | 9.46573 | 28 | 0.53427 | 9.98221 | 71 |
| 30 | 9.44819 | 26 | 9.46601 | 28 | 0.53399 | 9.98218 | 70 |
| 31 | 9.44845 | 26 | 9.46629 | 28 | 0.53371 | 9.98216 | 69 |
| 32 | 9.44871 | 26 | 9.46657 | 28 | 0.53343 | 9.98214 | 68 |
| 33 | 9.44897 | 26 | 9.46685 | 28 | 0.53315 | 9.98212 | 67 |
| 34 | 9.44923 | 25 | 9.46713 | 28 | 0.53287 | 9.98209 | 66 |
| 35 | 9.44948 | 26 | 9.46741 | 28 | 0.53259 | 9.98207 | 65 |
| 36 | 9.44974 | 26 | 9.46769 | 28 | 0.53231 | 9.98205 | 64 |
| 37 | 9.45000 | 26 | 9.46797 | 28 | 0.53203 | 9.98203 | 63 |
| 38 | 9.45026 | 26 | 9.46825 | 28 | 0.53175 | 9.98201 | 62 |
| 39 | 9.45052 | 25 | 9.46853 | 28 | 0.53147 | 9.98198 | 61 |
| 40 | 9.45077 | 26 | 9.46881 | 28 | 0.53119 | 9.98196 | 60 |
| 41 | 9.45103 | 26 | 9.46909 | 28 | 0.53091 | 9.98194 | 59 |
| 42 | 9.45129 | 26 | 9.46937 | 28 | 0.53063 | 9.98192 | 58 |
| 43 | 9.45155 | 25 | 9.46965 | 28 | 0.53035 | 9.98189 | 57 |
| 44 | 9.45180 | 26 | 9.46993 | 28 | 0.53007 | 9.98187 | 56 |
| 45 | 9.45206 | 26 | 9.47021 | 28 | 0.52979 | 9.98185 | 55 |
| 46 | 9.45232 | 25 | 9.47049 | 28 | 0.52951 | 9.98183 | 54 |
| 47 | 9.45257 | 26 | 9.47077 | 28 | 0.52923 | 9.98180 | 53 |
| 48 | 9.45283 | 26 | 9.47105 | 28 | 0.52895 | 9.98178 | 52 |
| 49 | 9.45309 | 25 | 9.47133 | 27 | 0.52867 | 9.98176 | 51 |
| 50 | 9.45334 | | 9.47160 | | 0.52840 | 9.98174 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 29 | 28 | 27 | 26 |
|---|---|---|---|---|
| 1 | 2.9 | 2.8 | 2.7 | 2.6 |
| 2 | 5.8 | 5.6 | 5.4 | 5.2 |
| 3 | 8.7 | 8.4 | 8.1 | 7.8 |
| 4 | 11.6 | 11.2 | 10.8 | 10.4 |
| 5 | 14.5 | 14.0 | 13.5 | 13.0 |
| 6 | 17.4 | 16.8 | 16.2 | 15.6 |
| 7 | 20.3 | 19.6 | 18.9 | 18.2 |
| 8 | 23.2 | 22.4 | 21.6 | 20.8 |
| 9 | 26.1 | 25.2 | 24.3 | 23.4 |

| | Sin. | d. | Tang | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.45334 | 26 | 9.47160 | 28 | 0.52840 | 9.98174 | 50 |
| 51 | 9.45360 | 25 | 9.47188 | 28 | 0.52812 | 9.98171 | 49 |
| 52 | 9.45385 | 26 | 9.47216 | 28 | 0.52784 | 9.98169 | 48 |
| 53 | 9.45411 | 25 | 9.47244 | 28 | 0.52756 | 9.98167 | 47 |
| 54 | 9.45436 | 26 | 9.47272 | 27 | 0.52728 | 9.98165 | 46 |
| 55 | 9.45462 | 25 | 9.47299 | 28 | 0.52701 | 9.98162 | 45 |
| 56 | 9.45487 | 26 | 9.47327 | 28 | 0.52673 | 9.98160 | 44 |
| 57 | 9.45513 | 25 | 9.47355 | 28 | 0.52645 | 9.98158 | 43 |
| 58 | 9.45538 | 26 | 9.47383 | 27 | 0.52617 | 9.98156 | 42 |
| 59 | 9.45564 | 25 | 9.47410 | 28 | 0.52590 | 9.98153 | 41 |
| 60 | 9.45589 | 26 | 9.47438 | 28 | 0.52562 | 9.98151 | 40 |
| 61 | 9.45615 | 25 | 9.47466 | 27 | 0.52534 | 9.98149 | 39 |
| 62 | 9.45640 | 25 | 9.47493 | 28 | 0.52507 | 9.98147 | 38 |
| 63 | 9.45665 | 26 | 9.47521 | 28 | 0.52479 | 9.98144 | 37 |
| 64 | 9.45691 | 25 | 9.47549 | 27 | 0.52451 | 9.98142 | 36 |
| 65 | 9.45716 | 26 | 9.47576 | 28 | 0.52424 | 9.98140 | 35 |
| 66 | 9.45742 | 25 | 9.47604 | 28 | 0.52396 | 9.98138 | 34 |
| 67 | 9.45767 | 25 | 9.47632 | 27 | 0.52368 | 9.98135 | 33 |
| 68 | 9.45792 | 25 | 9.47659 | 28 | 0.52341 | 9.98133 | 32 |
| 69 | 9.45817 | 26 | 9.47687 | 27 | 0.52313 | 9.98131 | 31 |
| 70 | 9.45843 | 25 | 9.47714 | 28 | 0.52286 | 9.98129 | 30 |
| 71 | 9.45868 | 25 | 9.47742 | 27 | 0.52258 | 9.98126 | 29 |
| 72 | 9.45893 | 25 | 9.47769 | 28 | 0.52231 | 9.98124 | 28 |
| 73 | 9.45918 | 26 | 9.47797 | 27 | 0.52203 | 9.98122 | 27 |
| 74 | 9.45944 | 25 | 9.47824 | 28 | 0.52176 | 9.98119 | 26 |
| 75 | 9.45969 | 25 | 9.47852 | 27 | 0.52148 | 9.98117 | 25 |
| 76 | 9.45994 | 25 | 9.47879 | 28 | 0.52121 | 9.98115 | 24 |
| 77 | 9.46019 | 25 | 9.47907 | 27 | 0.52093 | 9.98113 | 23 |
| 78 | 9.46044 | 25 | 9.47934 | 27 | 0.52066 | 9.98110 | 22 |
| 79 | 9.46069 | 26 | 9.47961 | 28 | 0.52039 | 9.98108 | 21 |
| 80 | 9.46095 | 25 | 9.47989 | 27 | 0.52011 | 9.98106 | 20 |
| 81 | 9.46120 | 25 | 9.48016 | 28 | 0.51984 | 9.98103 | 19 |
| 82 | 9.46145 | 25 | 9.48044 | 27 | 0.51956 | 9.98101 | 18 |
| 83 | 9.46170 | 25 | 9.48071 | 27 | 0.51929 | 9.98099 | 17 |
| 84 | 9.46195 | 25 | 9.48098 | 28 | 0.51902 | 9.98097 | 16 |
| 85 | 9.46220 | 25 | 9.48126 | 27 | 0.51874 | 9.98094 | 15 |
| 86 | 9.46245 | 25 | 9.48153 | 27 | 0.51847 | 9.98092 | 14 |
| 87 | 9.46270 | 25 | 9.48180 | 28 | 0.51820 | 9.98090 | 13 |
| 88 | 9.46295 | 25 | 9.48208 | 27 | 0.51792 | 9.98087 | 12 |
| 89 | 9.46320 | 25 | 9.48235 | 27 | 0.51765 | 9.98085 | 11 |
| 90 | 9.46345 | 25 | 9.48262 | 27 | 0.51738 | 9.98083 | 10 |
| 91 | 9.46370 | 25 | 9.48289 | 28 | 0.51711 | 9.98080 | 09 |
| 92 | 9.46395 | 25 | 9.48317 | 27 | 0.51683 | 9.98078 | 08 |
| 93 | 9.46420 | 24 | 9.48344 | 27 | 0.51656 | 9.98076 | 07 |
| 94 | 9.46444 | 25 | 9.48371 | 27 | 0.51629 | 9.98074 | 06 |
| 95 | 9.46469 | 25 | 9.48398 | 27 | 0.51602 | 9.98071 | 05 |
| 96 | 9.46494 | 25 | 9.48425 | 28 | 0.51575 | 9.98069 | 04 |
| 97 | 9.46519 | 25 | 9.48453 | 27 | 0.51547 | 9.98067 | 03 |
| 98 | 9.46544 | 25 | 9.48480 | 27 | 0.51520 | 9.98064 | 02 |
| 99 | 9.46569 | 25 | 9.48507 | 27 | 0.51493 | 9.98062 | 01 |
| 100 | 9.46594 | | 9.48534 | | 0.51466 | 9.98060 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| 28 | |
|---|---|
| 1 | 2.8 |
| 2 | 5.6 |
| 3 | 8.4 |
| 4 | 11.2 |
| 5 | 14.0 |
| 6 | 16.8 |
| 7 | 19.6 |
| 8 | 22.4 |
| 9 | 25.2 |

| 27 | |
|---|---|
| 1 | 2.7 |
| 2 | 5.4 |
| 3 | 8.1 |
| 4 | 10.8 |
| 5 | 13.5 |
| 6 | 16.2 |
| 7 | 18.9 |
| 8 | 21.6 |
| 9 | 24.3 |

| 25 | |
|---|---|
| 1 | 2.5 |
| 2 | 5.0 |
| 3 | 7.5 |
| 4 | 10.0 |
| 5 | 12.5 |
| 6 | 15.0 |
| 7 | 17.5 |
| 8 | 20.0 |
| 9 | 22.5 |

| 24 | |
|---|---|
| 1 | 2.4 |
| 2 | 4.8 |
| 3 | 7.2 |
| 4 | 9.6 |
| 5 | 12.0 |
| 6 | 14.4 |
| 7 | 16.8 |
| 8 | 19.2 |
| 9 | 21.6 |

# 17°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.46594 | 24 | 9.48534 | 27 | 0.51466 | 9.98060 | 100 |
| 01 | 9.46618 | 25 | 9.48561 | 27 | 0.51439 | 9.98057 | 99 |
| 02 | 9.46643 | 25 | 9.48588 | 27 | 0.51412 | 9.98055 | 98 |
| 03 | 9.46668 | 25 | 9.48615 | 27 | 0.51385 | 9.98053 | 97 |
| 04 | 9.46693 | 24 | 9.48642 | 27 | 0.51358 | 9.98050 | 96 |
| 05 | 9.46717 | 25 | 9.48669 | 27 | 0.51331 | 9.98048 | 95 |
| 06 | 9.46742 | 25 | 9.48696 | 27 | 0.51304 | 9.98046 | 94 |
| 07 | 9.46767 | 24 | 9.48723 | 27 | 0.51277 | 9.98043 | 93 |
| 08 | 9.46791 | 25 | 9.48750 | 27 | 0.51250 | 9.98041 | 92 |
| 09 | 9.46816 | 25 | 9.48777 | 27 | 0.51223 | 9.98039 | 91 |
| 10 | 9.46841 | 24 | 9.48804 | 27 | 0.51196 | 9.98036 | 90 |
| 11 | 9.46865 | 25 | 9.48831 | 27 | 0.51169 | 9.98034 | 89 |
| 12 | 9.46890 | 25 | 9.48858 | 27 | 0.51142 | 9.98032 | 88 |
| 13 | 9.46915 | 24 | 9.48885 | 27 | 0.51115 | 9.98029 | 87 |
| 14 | 9.46939 | 25 | 9.48912 | 27 | 0.51088 | 9.98027 | 86 |
| 15 | 9.46964 | 24 | 9.48939 | 27 | 0.51061 | 9.98025 | 85 |
| 16 | 9.46988 | 25 | 9.48966 | 27 | 0.51034 | 9.98022 | 84 |
| 17 | 9.47013 | 24 | 9.48993 | 27 | 0.51007 | 9.98020 | 83 |
| 18 | 9.47037 | 25 | 9.49020 | 26 | 0.50980 | 9.98018 | 82 |
| 19 | 9.47062 | 24 | 9.49046 | 27 | 0.50954 | 9.98015 | 81 |
| 20 | 9.47086 | 25 | 9.49073 | 27 | 0.50927 | 9.98013 | 80 |
| 21 | 9.47111 | 24 | 9.49100 | 27 | 0.50900 | 9.98011 | 79 |
| 22 | 9.47135 | 25 | 9.49127 | 27 | 0.50873 | 9.98008 | 78 |
| 23 | 9.47160 | 24 | 9.49154 | 27 | 0.50846 | 9.98006 | 77 |
| 24 | 9.47184 | 25 | 9.49181 | 26 | 0.50819 | 9.98004 | 76 |
| 25 | 9.47209 | 24 | 9.49207 | 27 | 0.50793 | 9.98001 | 75 |
| 26 | 9.47233 | 24 | 9.49234 | 27 | 0.50766 | 9.97999 | 74 |
| 27 | 9.47257 | 25 | 9.49261 | 27 | 0.50739 | 9.97997 | 73 |
| 28 | 9.47282 | 24 | 9.49288 | 26 | 0.50712 | 9.97994 | 72 |
| 29 | 9.47306 | 24 | 9.49314 | 27 | 0.50686 | 9.97992 | 71 |
| 30 | 9.47330 | 25 | 9.49341 | 27 | 0.50659 | 9.97989 | 70 |
| 31 | 9.47355 | 24 | 9.49368 | 26 | 0.50632 | 9.97987 | 69 |
| 32 | 9.47379 | 24 | 9.49394 | 27 | 0.50606 | 9.97985 | 68 |
| 33 | 9.47403 | 25 | 9.49421 | 27 | 0.50579 | 9.97982 | 67 |
| 34 | 9.47428 | 24 | 9.49448 | 26 | 0.50552 | 9.97980 | 66 |
| 35 | 9.47452 | 24 | 9.49474 | 27 | 0.50526 | 9.97978 | 65 |
| 36 | 9.47476 | 24 | 9.49501 | 27 | 0.50499 | 9.97975 | 64 |
| 37 | 9.47500 | 25 | 9.49528 | 26 | 0.50472 | 9.97973 | 63 |
| 38 | 9.47525 | 24 | 9.49554 | 27 | 0.50446 | 9.97971 | 62 |
| 39 | 9.47549 | 24 | 9.49581 | 26 | 0.50419 | 9.97968 | 61 |
| 40 | 9.47573 | 24 | 9.49607 | 27 | 0.50393 | 9.97966 | 60 |
| 41 | 9.47597 | 24 | 9.49634 | 26 | 0.50366 | 9.97963 | 59 |
| 42 | 9.47621 | 25 | 9.49660 | 27 | 0.50340 | 9.97961 | 58 |
| 43 | 9.47646 | 24 | 9.49687 | 26 | 0.50313 | 9.97959 | 57 |
| 44 | 9.47670 | 24 | 9.49713 | 27 | 0.50287 | 9.97956 | 56 |
| 45 | 9.47694 | 24 | 9.49740 | 26 | 0.50260 | 9.97954 | 55 |
| 46 | 9.47718 | 24 | 9.49766 | 27 | 0.50234 | 9.97951 | 54 |
| 47 | 9.47742 | 24 | 9.49793 | 26 | 0.50207 | 9.97949 | 53 |
| 48 | 9.47766 | 24 | 9.49819 | 27 | 0.50181 | 9.97947 | 52 |
| 49 | 9.47790 | 24 | 9.49846 | 26 | 0.50154 | 9.97944 | 51 |
| 50 | 9.47814 | | 9.49872 | | 0.50128 | 9.97942 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 27 | 26 | 25 | 24 |
|---|---|---|---|---|
| 1 | 2.7 | 2.6 | 2.5 | 2.4 |
| 2 | 5.4 | 5.2 | 5.0 | 4.8 |
| 3 | 8.1 | 7.8 | 7.5 | 7.2 |
| 4 | 10.8 | 10.4 | 10.0 | 9.6 |
| 5 | 13.5 | 13.0 | 12.5 | 12.0 |
| 6 | 16.2 | 15.6 | 15.0 | 14.4 |
| 7 | 18.9 | 18.2 | 17.5 | 16.8 |
| 8 | 21.6 | 20.8 | 20.0 | 19.2 |
| 9 | 24.3 | 23.4 | 22.5 | 21.6 |

P. P.

# 72°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.47814 | 24 | 9.49872 | 27 | 0.50128 | 9.97942 | 50 |
| 51 | 9.47838 | 24 | 9.49899 | 26 | 0.50101 | 9.97940 | 49 |
| 52 | 9.47862 | 24 | 9.49925 | 26 | 0.50075 | 9.97937 | 48 |
| 53 | 9.47886 | 24 | 9.49951 | 27 | 0.50049 | 9.97935 | 47 |
| 54 | 9.47910 | 24 | 9.49978 | 26 | 0.50022 | 9.97932 | 46 |
| 55 | 9.47934 | 24 | 9.50004 | 27 | c.49996 | 9.97930 | 45 |
| 56 | 9.47958 | 24 | 9.50031 | 26 | 0.49969 | 9.97928 | 44 |
| 57 | 9.47982 | 24 | 9.50057 | 26 | 0.49943 | 9.97925 | 43 |
| 58 | 9.48006 | 24 | 9.50083 | 27 | 0.49917 | 9.97923 | 42 |
| 59 | 9.48030 | 24 | 9.50110 | 26 | 0.49890 | 9.97920 | 41 |
| 60 | 9.48054 | 24 | 9.50136 | 26 | 0.49864 | 9.97918 | 40 |
| 61 | 9.48078 | 24 | 9.50162 | 26 | 0.49838 | 9.97916 | 39 |
| 62 | 9.48102 | 23 | 9.50188 | 27 | 0.49812 | 9.97913 | 38 |
| 63 | 9.48125 | 24 | 9.50215 | 26 | 0.49785 | 9.97911 | 37 |
| 64 | 9.48149 | 24 | 9.50241 | 26 | 0.49759 | 9.97908 | 36 |
| 65 | 9.48173 | 24 | 9.50267 | 26 | 0.49733 | 9.97906 | 35 |
| 66 | 9.48197 | 24 | 9.50293 | 27 | 0.49707 | 9.97904 | 34 |
| 67 | 9.48221 | 24 | 9.50320 | 26 | 0.49680 | 9.97901 | 33 |
| 68 | 9.48245 | 23 | 9.50346 | 26 | 0.49654 | 9.97899 | 32 |
| 69 | 9.48268 | 24 | 9.50372 | 26 | 0.49628 | 9.97896 | 31 |
| 70 | 9.48292 | 24 | 9.50398 | 26 | 0.49602 | 9.97894 | 30 |
| 71 | 9.48316 | 24 | 9.50424 | 27 | 0.49576 | 9.97891 | 29 |
| 72 | 9.48340 | 23 | 9.50451 | 26 | 0.49549 | 9.97889 | 28 |
| 73 | 9.48363 | 24 | 9.50477 | 26 | 0.49523 | 9.97887 | 27 |
| 74 | 9.48387 | 24 | 9.50503 | 26 | 0.49497 | 9.97884 | 26 |
| 75 | 9.48411 | 23 | 9.50529 | 26 | 0.49471 | 9.97882 | 25 |
| 76 | 9.48434 | 24 | 9.50555 | 26 | 0.49445 | 9.97879 | 24 |
| 77 | 9.48458 | 24 | 9.50581 | 26 | 0.49419 | 9.97877 | 23 |
| 78 | 9.48482 | 23 | 9.50607 | 26 | 0.49393 | 9.97874 | 22 |
| 79 | 9.48505 | 24 | 9.50633 | 26 | 0.49367 | 9.97872 | 21 |
| 80 | 9.48529 | 23 | 9.50659 | 26 | 0.49341 | 9.97870 | 20 |
| 81 | 9.48552 | 24 | 9.50685 | 26 | 0.49315 | 9.97867 | 19 |
| 82 | 9.48576 | 24 | 9.50711 | 26 | 0.49289 | 9.97865 | 18 |
| 83 | 9.48600 | 23 | 9.50737 | 26 | 0.49263 | 9.97862 | 17 |
| 84 | 9.48623 | 24 | 9.50763 | 26 | 0.49237 | 9.97860 | 16 |
| 85 | 9.48647 | 23 | 9.50789 | 26 | 0.49211 | 9.97857 | 15 |
| 86 | 9.48670 | 24 | 9.50815 | 26 | 0.49185 | 9.97855 | 14 |
| 87 | 9.48694 | 23 | 9.50841 | 26 | 0.49159 | 9.97853 | 13 |
| 88 | 9.48717 | 24 | 9.50867 | 26 | 0.49133 | 9.97850 | 12 |
| 89 | 9.48741 | 23 | 9.50893 | 26 | 0.49107 | 9.97848 | 11 |
| 90 | 9.48764 | 24 | 9.50919 | 26 | 0.49081 | 9.97845 | 10 |
| 91 | 9.48788 | 23 | 9.50945 | 26 | 0.49055 | 9.97843 | 09 |
| 92 | 9.48811 | 24 | 9.50971 | 26 | 0.49029 | 9.97840 | 08 |
| 93 | 9.48835 | 23 | 9.50997 | 26 | 0.49003 | 9.97838 | 07 |
| 94 | 9.48858 | 23 | 9.51023 | 25 | 0.48977 | 9.97835 | 06 |
| 95 | 9.48881 | 24 | 9.51048 | 26 | 0.48952 | 9.97833 | 05 |
| 96 | 9.48905 | 23 | 9.51074 | 26 | 0.48926 | 9.97830 | 04 |
| 97 | 9.48928 | 24 | 9.51100 | 26 | 0.48900 | 9.97828 | 03 |
| 98 | 9.48952 | 23 | 9.51126 | 26 | 0.48874 | 9.97826 | 02 |
| 99 | 9.48975 | 23 | 9.51152 | 26 | 0.48848 | 9.97823 | 01 |
| 100 | 9.48998 | | 9.51178 | | 0.48822 | 9.97821 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 27 | 26 | 24 | 28 |
|---|---|---|---|---|
| 1 | 2.7 | 2.6 | 2.4 | 2.3 |
| 2 | 5.4 | 5.2 | 4.8 | 4.6 |
| 3 | 8.1 | 7.8 | 7.2 | 6.9 |
| 4 | 10.8 | 10.4 | 9.6 | 9.2 |
| 5 | 13.5 | 13.0 | 12.0 | 11.5 |
| 6 | 16.2 | 15.6 | 14.4 | 13.8 |
| 7 | 18.9 | 18.2 | 16.8 | 16.1 |
| 8 | 21.6 | 20.8 | 19.2 | 18.4 |
| 9 | 24.3 | 23.4 | 21.6 | 20.7 |

*

P. P.

# 18°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.48998 | 24 | 9.51178 | 25 | 0.48822 | 9.97821 | 100 |
| 01 | 9.49022 | 23 | 9.51203 | 26 | 0.48797 | 9.97818 | 99 |
| 02 | 9.49045 | 23 | 9.51229 | 26 | 0.48771 | 9.97816 | 98 |
| 03 | 9.49068 | 23 | 9.51255 | 26 | 0.48745 | 9.97813 | 97 |
| 04 | 9.49091 | 24 | 9.51281 | 25 | 0.48719 | 9.97811 | 96 |
| 05 | 9.49115 | 23 | 9.51306 | 26 | 0.48694 | 9.97808 | 95 |
| 06 | 9.49138 | 23 | 9.51332 | 26 | 0.48668 | 9.97806 | 94 |
| 07 | 9.49161 | 23 | 9.51358 | 26 | 0.48642 | 9.97803 | 93 |
| 08 | 9.49184 | 24 | 9.51384 | 25 | 0.48616 | 9.97801 | 92 |
| 09 | 9.49208 | 23 | 9.51409 | 26 | 0.48591 | 9.97798 | 91 |
| 10 | 9.49231 | 23 | 9.51435 | 26 | 0.48565 | 9.97796 | 90 |
| 11 | 9.49254 | 23 | 9.51461 | 25 | 0.48539 | 9.97793 | 89 |
| 12 | 9.49277 | 23 | 9.51486 | 26 | 0.48514 | 9.97791 | 88 |
| 13 | 9.49300 | 23 | 9.51512 | 25 | 0.48488 | 9.97788 | 87 |
| 14 | 9.49323 | 24 | 9.51537 | 26 | 0.48463 | 9.97786 | 86 |
| 15 | 9.49347 | 23 | 9.51563 | 26 | 0.48437 | 9.97784 | 85 |
| 16 | 9.49370 | 23 | 9.51589 | 25 | 0.48411 | 9.97781 | 84 |
| 17 | 9.49393 | 23 | 9.51614 | 26 | 0.48386 | 9.97779 | 83 |
| 18 | 9.49416 | 23 | 9.51640 | 25 | 0.48360 | 9.97776 | 82 |
| 19 | 9.49439 | 23 | 9.51665 | 26 | 0.48335 | 9.97774 | 81 |
| 20 | 9.49462 | 23 | 9.51691 | 26 | 0.48309 | 9.97771 | 80 |
| 21 | 9.49485 | 23 | 9.51717 | 25 | 0.48283 | 9.97769 | 79 |
| 22 | 9.49508 | 23 | 9.51742 | 26 | 0.48258 | 9.97766 | 78 |
| 23 | 9.49531 | 23 | 9.51768 | 25 | 0.48232 | 9.97764 | 77 |
| 24 | 9.49554 | 23 | 9.51793 | 26 | 0.48207 | 9.97761 | 76 |
| 25 | 9.49577 | 23 | 9.51819 | 25 | 0.48181 | 9.97759 | 75 |
| 26 | 9.49600 | 23 | 9.51844 | 26 | 0.48156 | 9.97756 | 74 |
| 27 | 9.49623 | 23 | 9.51870 | 25 | 0.48130 | 9.97754 | 73 |
| 28 | 9.49646 | 23 | 9.51895 | 25 | 0.48105 | 9.97751 | 72 |
| 29 | 9.49669 | 23 | 9.51920 | 26 | 0.48080 | 9.97749 | 71 |
| 30 | 9.49692 | 23 | 9.51946 | 25 | 0.48054 | 9.97746 | 70 |
| 31 | 9.49715 | 23 | 9.51971 | 26 | 0.48029 | 9.97744 | 69 |
| 32 | 9.49738 | 23 | 9.51997 | 25 | 0.48003 | 9.97741 | 68 |
| 33 | 9.49761 | 22 | 9.52022 | 25 | 0.47978 | 9.97739 | 67 |
| 34 | 9.49783 | 23 | 9.52047 | 26 | 0.47953 | 9.97736 | 66 |
| 35 | 9.49806 | 23 | 9.52073 | 25 | 0.47927 | 9.97734 | 65 |
| 36 | 9.49829 | 23 | 9.52098 | 26 | 0.47902 | 9.97731 | 64 |
| 37 | 9.49852 | 23 | 9.52124 | 25 | 0.47876 | 9.97729 | 63 |
| 38 | 9.49875 | 23 | 9.52149 | 25 | 0.47851 | 9.97726 | 62 |
| 39 | 9.49898 | 22 | 9.52174 | 26 | 0.47826 | 9.97723 | 61 |
| 40 | 9.49920 | 23 | 9.52200 | 25 | 0.47800 | 9.97721 | 60 |
| 41 | 9.49943 | 23 | 9.52225 | 25 | 0.47775 | 9.97718 | 59 |
| 42 | 9.49966 | 23 | 9.52250 | 25 | 0.47750 | 9.97716 | 58 |
| 43 | 9.49989 | 22 | 9.52275 | 26 | 0.47725 | 9.97713 | 57 |
| 44 | 9.50011 | 23 | 9.52301 | 25 | 0.47699 | 9.97711 | 56 |
| 45 | 9.50034 | 23 | 9.52326 | 25 | 0.47674 | 9.97708 | 55 |
| 46 | 9.50057 | 23 | 9.52351 | 25 | 0.47649 | 9.97706 | 54 |
| 47 | 9.50080 | 22 | 9.52376 | 26 | 0.47624 | 9.97703 | 53 |
| 48 | 9.50102 | 23 | 9.52402 | 25 | 0.47598 | 9.97701 | 52 |
| 49 | 9.50125 | 23 | 9.52427 | 25 | 0.47573 | 9.97698 | 51 |
| 50 | 9.50148 | | 9.52452 | | 0.47548 | 9.97696 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 26 |
|---|---|
| 1 | 2.6 |
| 2 | 5.2 |
| 3 | 7.8 |
| 4 | 10.4 |
| 5 | 13.0 |
| 6 | 15.6 |
| 7 | 18.2 |
| 8 | 20.8 |
| 9 | 23.4 |

| | 25 |
|---|---|
| 1 | 2.5 |
| 2 | 5.0 |
| 3 | 7.5 |
| 4 | 10.0 |
| 5 | 12.5 |
| 6 | 15.0 |
| 7 | 17.5 |
| 8 | 20.0 |
| 9 | 22.5 |

| | 24 |
|---|---|
| 1 | 2.4 |
| 2 | 4.8 |
| 3 | 7.2 |
| 4 | 9.6 |
| 5 | 12.0 |
| 6 | 14.4 |
| 7 | 16.8 |
| 8 | 19.2 |
| 9 | 21.6 |

| | 23 |
|---|---|
| 1 | 2.3 |
| 2 | 4.6 |
| 3 | 6.9 |
| 4 | 9.2 |
| 5 | 11.5 |
| 6 | 13.8 |
| 7 | 16.1 |
| 8 | 18.4 |
| 9 | 20.7 |

P. P.

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.50148 | 22 | 9.52452 | 25 | 0.47548 | 9.97696 | 50 |
| 51 | 9.50170 | 23 | 9.52477 | 25 | 0.47523 | 9.97693 | 49 |
| 52 | 9.50193 | 23 | 9.52502 | 26 | 0.47498 | 9.97691 | 48 |
| 53 | 9.50216 | 22 | 9.52528 | 25 | 0.47472 | 9.97688 | 47 |
| 54 | 9.50238 | 23 | 9.52553 | 25 | 0.47447 | 9.97686 | 46 |
| 55 | 9.50261 | 22 | 9.52578 | 25 | 0.47422 | 9.97683 | 45 |
| 56 | 9.50283 | 23 | 9.52603 | 25 | 0.47397 | 9.97680 | 44 |
| 57 | 9.50306 | 22 | 9.52628 | 25 | 0.47372 | 9.97678 | 43 |
| 58 | 9.50328 | 23 | 9.52653 | 25 | 0.47347 | 9.97675 | 42 |
| 59 | 9.50351 | 23 | 9.52678 | 25 | 0.47322 | 9.97673 | 41 |
| 60 | 9.50374 | 22 | 9.52703 | 25 | 0.47297 | 9.97670 | 40 |
| 61 | 9.50396 | 23 | 9.52728 | 25 | 0.47272 | 9.97668 | 39 |
| 62 | 9.50419 | 22 | 9.52753 | 25 | 0.47247 | 9.97665 | 38 |
| 63 | 9.50441 | 23 | 9.52778 | 26 | 0.47222 | 9.97663 | 37 |
| 64 | 9.50464 | 22 | 9.52804 | 25 | 0.47196 | 9.97660 | 36 |
| 65 | 9.50486 | 22 | 9.52829 | 25 | 0.47171 | 9.97657 | 35 |
| 66 | 9.50508 | 23 | 9.52854 | 25 | 0.47146 | 9.97655 | 34 |
| 67 | 9.50531 | 22 | 9.52879 | 25 | 0.47121 | 9.97652 | 33 |
| 68 | 9.50553 | 23 | 9.52904 | 25 | 0.47096 | 9.97650 | 32 |
| 69 | 9.50576 | 22 | 9.52929 | 24 | 0.47071 | 9.97647 | 31 |
| 70 | 9.50598 | 22 | 9.52953 | 25 | 0.47047 | 9.97645 | 30 |
| 71 | 9.50620 | 23 | 9.52978 | 25 | 0.47022 | 9.97642 | 29 |
| 72 | 9.50643 | 22 | 9.53003 | 25 | 0.46997 | 9.97640 | 28 |
| 73 | 9.50665 | 23 | 9.53028 | 25 | 0.46972 | 9.97637 | 27 |
| 74 | 9.50688 | 22 | 9.53053 | 25 | 0.46947 | 9.97634 | 26 |
| 75 | 9.50710 | 22 | 9.53078 | 25 | 0.46922 | 9.97632 | 25 |
| 76 | 9.50732 | 23 | 9.53103 | 25 | 0.46897 | 9.97629 | 24 |
| 77 | 9.50755 | 22 | 9.53128 | 25 | 0.46872 | 9.97627 | 23 |
| 78 | 9.50777 | 22 | 9.53153 | 25 | 0.46847 | 9.97624 | 22 |
| 79 | 9.50799 | 22 | 9.53178 | 24 | 0.46822 | 9.97621 | 21 |
| 80 | 9.50821 | 23 | 9.53202 | 25 | 0.46798 | 9.97619 | 20 |
| 81 | 9.50844 | 22 | 9.53227 | 25 | 0.46773 | 9.97616 | 19 |
| 82 | 9.50866 | 22 | 9.53252 | 25 | 0.46748 | 9.97614 | 18 |
| 83 | 9.50888 | 22 | 9.53277 | 25 | 0.46723 | 9.97611 | 17 |
| 84 | 9.50910 | 23 | 9.53302 | 25 | 0.46698 | 9.97609 | 16 |
| 85 | 9.50933 | 22 | 9.53327 | 24 | 0.46673 | 9.97606 | 15 |
| 86 | 9.50955 | 22 | 9.53351 | 25 | 0.46649 | 9.97603 | 14 |
| 87 | 9.50977 | 22 | 9.53376 | 25 | 0.46624 | 9.97601 | 13 |
| 88 | 9.50999 | 22 | 9.53401 | 25 | 0.46599 | 9.97598 | 12 |
| 89 | 9.51021 | 22 | 9.53426 | 24 | 0.46574 | 9.97596 | 11 |
| 90 | 9.51043 | 23 | 9.53450 | 25 | 0.46550 | 9.97593 | 10 |
| 91 | 9.51066 | 22 | 9.53475 | 25 | 0.46525 | 9.97590 | 09 |
| 92 | 9.51088 | 22 | 9.53500 | 25 | 0.46500 | 9.97588 | 08 |
| 93 | 9.51110 | 22 | 9.53525 | 24 | 0.46475 | 9.97585 | 07 |
| 94 | 9.51132 | 22 | 9.53549 | 25 | 0.46451 | 9.97583 | 06 |
| 95 | 9.51154 | 22 | 9.53574 | 25 | 0.46426 | 9.97580 | 05 |
| 96 | 9.51176 | 22 | 9.53599 | 24 | 0.46401 | 9.97577 | 04 |
| 97 | 9.51198 | 22 | 9.53623 | 25 | 0.46377 | 9.97575 | 03 |
| 98 | 9.51220 | 22 | 9.53648 | 25 | 0.46352 | 9.97572 | 02 |
| 99 | 9.51242 | 22 | 9.53673 | 24 | 0.46327 | 9.97570 | 01 |
| 100 | 9.51264 | | 9.53697 | | 0.46303 | 9.97567 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 25 | 24 | 23 | 22 |
|---|---|---|---|---|
| 1 | 2.5 | 2.4 | 2.3 | 2.2 |
| 2 | 5.0 | 4.8 | 4.6 | 4.4 |
| 3 | 7.5 | 7.2 | 6.9 | 6.6 |
| 4 | 10.0 | 9.6 | 9.2 | 8.8 |
| 5 | 12.5 | 12.0 | 11.5 | 11.0 |
| 6 | 15.0 | 14.4 | 13.8 | 13.2 |
| 7 | 17.5 | 16.8 | 16.1 | 15.4 |
| 8 | 20.0 | 19.2 | 18.4 | 17.6 |
| 9 | 22.5 | 21.6 | 20.7 | 19.8 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.51264 | 22 | 9.53697 | 25 | 0.46303 | 9.97567 | 100 |
| 01 | 9.51286 | 22 | 9.53722 | 24 | 0.46278 | 9.97564 | 99 |
| 02 | 9.51308 | 22 | 9.53746 | 25 | 0.46254 | 9.97562 | 98 |
| 03 | 9.51330 | 22 | 9.53771 | 25 | 0.46229 | 9.97559 | 97 |
| 04 | 9.51352 | 22 | 9.53796 | 24 | 0.46204 | 9.97557 | 96 |
| 05 | 9.51374 | 22 | 9.53820 | 25 | 0.46180 | 9.97554 | 95 |
| 06 | 9.51396 | 22 | 9.53845 | 24 | 0.46155 | 9.97551 | 94 |
| 07 | 9.51418 | 22 | 9.53869 | 25 | 0.46131 | 9.97549 | 93 |
| 08 | 9.51440 | 22 | 9.53894 | 24 | 0.46106 | 9.97546 | 92 |
| 09 | 9.51462 | 22 | 9.53918 | 25 | 0.46082 | 9.97543 | 91 |
| 10 | 9.51484 | 22 | 9.53943 | 24 | 0.46057 | 9.97541 | 90 |
| 11 | 9.51506 | 21 | 9.53967 | 25 | 0.46033 | 9.97538 | 89 |
| 12 | 9.51527 | 22 | 9.53992 | 24 | 0.46008 | 9.97536 | 88 |
| 13 | 9.51549 | 22 | 9.54016 | 25 | 0.45984 | 9.97533 | 87 |
| 14 | 9.51571 | 22 | 9.54041 | 24 | 0.45959 | 9.97530 | 86 |
| 15 | 9.51593 | 22 | 9.54065 | 25 | 0.45935 | 9.97528 | 85 |
| 16 | 9.51615 | 22 | 9.54090 | 24 | 0.45910 | 9.97525 | 84 |
| 17 | 9.51637 | 21 | 9.54114 | 25 | 0.45886 | 9.97522 | 83 |
| 18 | 9.51658 | 22 | 9.54139 | 24 | 0.45861 | 9.97520 | 82 |
| 19 | 9.51680 | 22 | 9.54163 | 24 | 0.45837 | 9.97517 | 81 |
| 20 | 9.51702 | 22 | 9.54187 | 25 | 0.45813 | 9.97515 | 80 |
| 21 | 9.51724 | 21 | 9.54212 | 24 | 0.45788 | 9.97512 | 79 |
| 22 | 9.51745 | 22 | 9.54236 | 25 | 0.45764 | 9.97509 | 78 |
| 23 | 9.51767 | 22 | 9.54261 | 24 | 0.45739 | 9.97507 | 77 |
| 24 | 9.51789 | 22 | 9.54285 | 24 | 0.45715 | 9.97504 | 76 |
| 25 | 9.51811 | 21 | 9.54309 | 25 | 0.45691 | 9.97501 | 75 |
| 26 | 9.51832 | 22 | 9.54334 | 24 | 0.45666 | 9.97499 | 74 |
| 27 | 9.51854 | 22 | 9.54358 | 24 | 0.45642 | 9.97496 | 73 |
| 28 | 9.51876 | 21 | 9.54382 | 25 | 0.45618 | 9.97493 | 72 |
| 29 | 9.51897 | 22 | 9.54407 | 24 | 0.45593 | 9.97491 | 71 |
| 30 | 9.51919 | 22 | 9.54431 | 24 | 0.45569 | 9.97488 | 70 |
| 31 | 9.51941 | 21 | 9.54455 | 25 | 0.45545 | 9.97485 | 69 |
| 32 | 9.51962 | 22 | 9.54480 | 24 | 0.45520 | 9.97483 | 68 |
| 33 | 9.51984 | 22 | 9.54504 | 24 | 0.45496 | 9.97480 | 67 |
| 34 | 9.52006 | 21 | 9.54528 | 24 | 0.45472 | 9.97477 | 66 |
| 35 | 9.52027 | 22 | 9.54552 | 25 | 0.45448 | 9.97475 | 65 |
| 36 | 9.52049 | 21 | 9.54577 | 24 | 0.45423 | 9.97472 | 64 |
| 37 | 9.52070 | 22 | 9.54601 | 24 | 0.45399 | 9.97469 | 63 |
| 38 | 9.52092 | 21 | 9.54625 | 24 | 0.45375 | 9.97467 | 62 |
| 39 | 9.52113 | 22 | 9.54649 | 24 | 0.45351 | 9.97464 | 61 |
| 40 | 9.52135 | 21 | 9.54673 | 25 | 0.45327 | 9.97461 | 60 |
| 41 | 9.52156 | 22 | 9.54698 | 24 | 0.45302 | 9.97459 | 59 |
| 42 | 9.52178 | 21 | 9.54722 | 24 | 0.45278 | 9.97456 | 58 |
| 43 | 9.52199 | 22 | 9.54746 | 24 | 0.45254 | 9.97453 | 57 |
| 44 | 9.52221 | 21 | 9.54770 | 24 | 0.45230 | 9.97451 | 56 |
| 45 | 9.52242 | 22 | 9.54794 | 24 | 0.45206 | 9.97448 | 55 |
| 46 | 9.52264 | 21 | 9.54818 | 25 | 0.45182 | 9.97445 | 54 |
| 47 | 9.52285 | 22 | 9.54843 | 24 | 0.45157 | 9.97443 | 53 |
| 48 | 9.52307 | 21 | 9.54867 | 24 | 0.45133 | 9.97440 | 52 |
| 49 | 9.52328 | 22 | 9.54891 | 24 | 0.45109 | 9.97437 | 51 |
| 50 | 9.52350 | | 9.54915 | | 0.45085 | 9.97435 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| 25 | | 24 | | 22 | | 21 | |
|---|---|---|---|---|---|---|---|
| 1 | 2.5 | 1 | 2.4 | 1 | 2.2 | 1 | 2.1 |
| 2 | 5.0 | 2 | 4.8 | 2 | 4.4 | 2 | 4.2 |
| 3 | 7.5 | 3 | 7.2 | 3 | 6.6 | 3 | 6.3 |
| 4 | 10.0 | 4 | 9.6 | 4 | 8.8 | 4 | 8.4 |
| 5 | 12.5 | 5 | 12.0 | 5 | 11.0 | 5 | 10.5 |
| 6 | 15.0 | 6 | 14.4 | 6 | 13.2 | 6 | 12.6 |
| 7 | 17.5 | 7 | 16.8 | 7 | 15.4 | 7 | 14.7 |
| 8 | 20.0 | 8 | 19.2 | 8 | 17.6 | 8 | 16.8 |
| 9 | 22.5 | 9 | 21.6 | 9 | 19.8 | 9 | 18.9 |

P. P.

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.52350 | 21 | 9.54915 | 24 | 0.45085 | 9.97435 | 50 |
| 51 | 9.52371 | 21 | 9.54939 | 24 | 0.45061 | 9.97432 | 49 |
| 52 | 9.52392 | 22 | 9.54963 | 24 | 0.45037 | 9.97429 | 48 |
| 53 | 9.52414 | 21 | 9.54987 | 24 | 0.45013 | 9.97427 | 47 |
| 54 | 9.52435 | 21 | 9.55011 | 24 | 0.44989 | 9.97424 | 46 |
| 55 | 9.52456 | 22 | 9.55035 | 24 | 0.44965 | 9.97421 | 45 |
| 56 | 9.52478 | 21 | 9.55059 | 24 | 0.44941 | 9.97419 | 44 |
| 57 | 9.52499 | 21 | 9.55083 | 24 | 0.44917 | 9.97416 | 43 |
| 58 | 9.52520 | 22 | 9.55107 | 24 | 0.44893 | 9.97413 | 42 |
| 59 | 9.52542 | 21 | 9.55131 | 24 | 0.44869 | 9.97410 | 41 |
| 60 | 9.52563 | 21 | 9.55155 | 24 | 0.44845 | 9.97408 | 40 |
| 61 | 9.52584 | 22 | 9.55179 | 24 | 0.44821 | 9.97405 | 39 |
| 62 | 9.52606 | 21 | 9.55203 | 24 | 0.44797 | 9.97402 | 38 |
| 63 | 9.52627 | 21 | 9.55227 | 24 | 0.44773 | 9.97400 | 37 |
| 64 | 9.52648 | 21 | 9.55251 | 24 | 0.44749 | 9.97397 | 36 |
| 65 | 9.52669 | 21 | 9.55275 | 24 | 0.44725 | 9.97394 | 35 |
| 66 | 9.52690 | 22 | 9.55299 | 24 | 0.44701 | 9.97392 | 34 |
| 67 | 9.52712 | 21 | 9.55323 | 24 | 0.44677 | 9.97389 | 33 |
| 68 | 9.52733 | 21 | 9.55347 | 24 | 0.44653 | 9.97386 | 32 |
| 69 | 9.52754 | 21 | 9.55371 | 24 | 0.44629 | 9.97383 | 31 |
| 70 | 9.52775 | 21 | 9.55395 | 23 | 0.44605 | 9.97381 | 30 |
| 71 | 9.52796 | 22 | 9.55418 | 24 | 0.44582 | 9.97378 | 29 |
| 72 | 9.52818 | 21 | 9.55442 | 24 | 0.44558 | 9.97375 | 28 |
| 73 | 9.52839 | 21 | 9.55466 | 24 | 0.44534 | 9.97373 | 27 |
| 74 | 9.52860 | 21 | 9.55490 | 24 | 0.44510 | 9.97370 | 26 |
| 75 | 9.52881 | 21 | 9.55514 | 24 | 0.44486 | 9.97367 | 25 |
| 76 | 9.52902 | 21 | 9.55538 | 24 | 0.44462 | 9.97364 | 24 |
| 77 | 9.52923 | 21 | 9.55562 | 23 | 0.44438 | 9.97362 | 23 |
| 78 | 9.52944 | 21 | 9.55585 | 24 | 0.44415 | 9.97359 | 22 |
| 79 | 9.52965 | 21 | 9.55609 | 24 | 0.44391 | 9.97356 | 21 |
| 80 | 9.52986 | 21 | 9.55633 | 24 | 0.44367 | 9.97353 | 20 |
| 81 | 9.53007 | 21 | 9.55657 | 23 | 0.44343 | 9.97351 | 19 |
| 82 | 9.53028 | 21 | 9.55680 | 24 | 0.44320 | 9.97348 | 18 |
| 83 | 9.53049 | 22 | 9.55704 | 24 | 0.44296 | 9.97345 | 17 |
| 84 | 9.53071 | 21 | 9.55728 | 24 | 0.44272 | 9.97343 | 16 |
| 85 | 9.53092 | 20 | 9.55752 | 23 | 0.44248 | 9.97340 | 15 |
| 86 | 9.53112 | 21 | 9.55775 | 24 | 0.44225 | 9.97337 | 14 |
| 87 | 9.53133 | 21 | 9.55799 | 24 | 0.44201 | 9.97334 | 13 |
| 88 | 9.53154 | 21 | 9.55823 | 24 | 0.44177 | 9.97332 | 12 |
| 89 | 9.53175 | 21 | 9.55847 | 23 | 0.44153 | 9.97329 | 11 |
| 90 | 9.53196 | 21 | 9.55870 | 24 | c.44130 | 9.97326 | 10 |
| 91 | 9.53217 | 21 | 9.55894 | 24 | 0.44106 | 9.97323 | 09 |
| 92 | 9.53238 | 21 | 9.55918 | 23 | 0.44082 | 9.97321 | 08 |
| 93 | 9.53259 | 21 | 9.55941 | 24 | 0.44059 | 9.97318 | 07 |
| 94 | 9.53280 | 21 | 9.55965 | 24 | 0.44035 | 9.97315 | 06 |
| 95 | 9.53301 | 21 | 9.55989 | 23 | 0.44011 | 9.97312 | 05 |
| 96 | 9.53322 | 21 | 9.56012 | 24 | 0.43988 | 9.97310 | 04 |
| 97 | 9.53343 | 20 | 9.56036 | 23 | 0.43964 | 9.97307 | 03 |
| 98 | 9.53363 | 21 | 9.56059 | 24 | 0.43941 | 9.97304 | 02 |
| 99 | 9.53384 | 21 | 9.56083 | 24 | 0.43917 | 9.97301 | 01 |
| 100 | 9.53405 | | 9.56107 | | 0.43893 | 9.97299 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| | 24 | 23 | 21 | 20 |
|---|---|---|---|---|
| 1 | 2.4 | 2.3 | 2.1 | 2.0 |
| 2 | 4.8 | 4.6 | 4.2 | 4.0 |
| 3 | 7.2 | 6.9 | 6.3 | 6.0 |
| 4 | 9.6 | 9.2 | 8.4 | 8.0 |
| 5 | 12.0 | 11.5 | 10.5 | 10.0 |
| 6 | 14.4 | 13.8 | 12.6 | 12.0 |
| 7 | 16.8 | 16.1 | 14.7 | 14.0 |
| 8 | 19.2 | 18.4 | 16.8 | 16.0 |
| 9 | 21.6 | 20.7 | 18.9 | 18.0 |

# 20°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 00 | 9.53405 | 21 | 9.56107 | 23 | 0.43893 | 9.97299 | 100 |
| 01 | 9.53426 | 21 | 9.56130 | 24 | 0.43870 | 9.97296 | 99 |
| 02 | 9.53447 | 21 | 9.56154 | 23 | 0.43846 | 9.97293 | 98 |
| 03 | 9.53468 | 20 | 9.56177 | 24 | 0.43823 | 9.97290 | 97 |
| 04 | 9.53488 | 21 | 9.56201 | 23 | 0.43799 | 9.97288 | 96 |
| 05 | 9.53509 | 21 | 9.56224 | 24 | 0.43776 | 9.97285 | 95 |
| 06 | 9.53530 | 21 | 9.56248 | 23 | 0.43752 | 9.97282 | 94 |
| 07 | 9.53551 | 20 | 9.56271 | 24 | 0.43729 | 9.97279 | 93 |
| 08 | 9.53571 | 21 | 9.56295 | 23 | 0.43705 | 9.97276 | 92 |
| 09 | 9.53592 | 21 | 9.56318 | 24 | 0.43682 | 9.97274 | 91 |
| 10 | 9.53613 | 21 | 9.56342 | 23 | 0.43658 | 9.97271 | 90 |
| 11 | 9.53634 | 20 | 9.56365 | 24 | 0.43635 | 9.97268 | 89 |
| 12 | 9.53654 | 21 | 9.56389 | 23 | 0.43611 | 9.97265 | 88 |
| 13 | 9.53675 | 21 | 9.56412 | 24 | 0.43588 | 9.97263 | 87 |
| 14 | 9.53696 | 20 | 9.56436 | 23 | 0.43564 | 9.97260 | 86 |
| 15 | 9.53716 | 21 | 9.56459 | 24 | 0.43541 | 9.97257 | 85 |
| 16 | 9.53737 | 21 | 9.56483 | 23 | 0.43517 | 9.97254 | 84 |
| 17 | 9.53758 | 20 | 9.56506 | 24 | 0.43494 | 9.97251 | 83 |
| 18 | 9.53778 | 21 | 9.56530 | 23 | 0.43470 | 9.97249 | 82 |
| 19 | 9.53799 | 20 | 9.56553 | 23 | 0.43447 | 9.97246 | 81 |
| 20 | 9.53819 | 21 | 9.56576 | 24 | 0.43424 | 9.97243 | 80 |
| 21 | 9.53840 | 21 | 9.56600 | 23 | 0.43400 | 9.97240 | 79 |
| 22 | 9.53861 | 20 | 9.56623 | 23 | 0.43377 | 9.97238 | 78 |
| 23 | 9.53881 | 21 | 9.56646 | 24 | 0.43354 | 9.97235 | 77 |
| 24 | 9.53902 | 20 | 9.56670 | 23 | 0.43330 | 9.97232 | 76 |
| 25 | 9.53922 | 21 | 9.56693 | 23 | 0.43307 | 9.97229 | 75 |
| 26 | 9.53943 | 20 | 9.56716 | 24 | 0.43284 | 9.97226 | 74 |
| 27 | 9.53963 | 21 | 9.56740 | 23 | 0.43260 | 9.97224 | 73 |
| 28 | 9.53984 | 20 | 9.56763 | 23 | 0.43237 | 9.97221 | 72 |
| 29 | 9.54004 | 21 | 9.56786 | 24 | 0.43214 | 9.97218 | 71 |
| 30 | 9.54025 | 20 | 9.56810 | 23 | 0.43190 | 9.97215 | 70 |
| 31 | 9.54045 | 21 | 9.56833 | 23 | 0.43167 | 9.97212 | 69 |
| 32 | 9.54066 | 20 | 9.56856 | 24 | 0.43144 | 9.97210 | 68 |
| 33 | 9.54086 | 21 | 9.56880 | 23 | 0.43120 | 9.97207 | 67 |
| 34 | 9.54107 | 20 | 9.56903 | 23 | 0.43097 | 9.97204 | 66 |
| 35 | 9.54127 | 21 | 9.56926 | 23 | 0.43074 | 9.97201 | 65 |
| 36 | 9.54148 | 20 | 9.56949 | 24 | 0.43051 | 9.97198 | 64 |
| 37 | 9.54168 | 20 | 9.56973 | 23 | 0.43027 | 9.97195 | 63 |
| 38 | 9.54188 | 21 | 9.56996 | 23 | 0.43004 | 9.97193 | 62 |
| 39 | 9.54209 | 20 | 9.57019 | 23 | 0.42981 | 9.97190 | 61 |
| 40 | 9.54229 | 21 | 9.57042 | 23 | 0.42958 | 9.97187 | 60 |
| 41 | 9.54250 | 20 | 9.57065 | 24 | 0.42935 | 9.97184 | 59 |
| 42 | 9.54270 | 20 | 9.57089 | 23 | 0.42911 | 9.97181 | 58 |
| 43 | 9.54290 | 21 | 9.57112 | 23 | 0.42888 | 9.97179 | 57 |
| 44 | 9.54311 | 20 | 9.57135 | 23 | 0.42865 | 9.97176 | 56 |
| 45 | 9.54331 | 20 | 9.57158 | 23 | 0.42842 | 9.97173 | 55 |
| 46 | 9.54351 | 21 | 9.57181 | 23 | 0.42819 | 9.97170 | 54 |
| 47 | 9.54372 | 20 | 9.57204 | 24 | 0.42796 | 9.97167 | 53 |
| 48 | 9.54392 | 20 | 9.57228 | 23 | 0.42772 | 9.97164 | 52 |
| 49 | 9.54412 | 21 | 9.57251 | 23 | 0.42749 | 9.97162 | 51 |
| 50 | 9.54433 | | 9.57274 | | 0.42726 | 9.97159 | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

**P. P.**

| | 24 | 23 | 21 | 20 |
|---|---|---|---|---|
| 1 | 2.4 | 2.3 | 2.1 | 2.0 |
| 2 | 4.8 | 4.6 | 4.2 | 4.0 |
| 3 | 7.2 | 6.9 | 6.3 | 6.0 |
| 4 | 9.6 | 9.2 | 8.4 | 8.0 |
| 5 | 12.0 | 11.5 | 10.5 | 10.0 |
| 6 | 14.4 | 13.8 | 12.6 | 12.0 |
| 7 | 16.8 | 16.1 | 14.7 | 14.0 |
| 8 | 19.2 | 18.4 | 16.8 | 16.0 |
| 9 | 21.6 | 20.7 | 18.9 | 18.0 |

# 69°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | |
|---|---|---|---|---|---|---|---|
| 50 | 9.54433 | 20 | 9.57274 | 23 | 0.42726 | 9.97159 | 50 |
| 51 | 9.54453 | 20 | 9.57297 | 23 | 0.42703 | 9.97156 | 49 |
| 52 | 9.54473 | 20 | 9.57320 | 23 | 0.42680 | 9.97153 | 48 |
| 53 | 9.54493 | 21 | 9.57343 | 23 | 0.42657 | 9.97150 | 47 |
| 54 | 9.54514 | 20 | 9.57366 | 23 | 0.42634 | 9.97147 | 46 |
| 55 | 9.54534 | 20 | 9.57389 | 23 | 0.42611 | 9.97145 | 45 |
| 56 | 9.54554 | 20 | 9.57412 | 23 | 0.42588 | 9.97142 | 44 |
| 57 | 9.54574 | 20 | 9.57435 | 23 | 0.42565 | 9.97139 | 43 |
| 58 | 9.54594 | 21 | 9.57458 | 23 | 0.42542 | 9.97136 | 42 |
| 59 | 9.54615 | 20 | 9.57481 | 23 | 0.42519 | 9.97133 | 41 |
| 60 | 9.54635 | 20 | 9.57504 | 23 | 0.42496 | 9.97130 | 40 |
| 61 | 9.54655 | 20 | 9.57527 | 23 | 0.42473 | 9.97127 | 39 |
| 62 | 9.54675 | 20 | 9.57550 | 23 | 0.42450 | 9.97125 | 38 |
| 63 | 9.54695 | 20 | 9.57573 | 23 | 0.42427 | 9.97122 | 37 |
| 64 | 9.54715 | 20 | 9.57596 | 23 | 0.42404 | 9.97119 | 36 |
| 65 | 9.54735 | 21 | 9.57619 | 23 | 0.42381 | 9.97116 | 35 |
| 66 | 9.54756 | 20 | 9.57642 | 23 | 0.42358 | 9.97113 | 34 |
| 67 | 9.54776 | 20 | 9.57665 | 23 | 0.42335 | 9.97110 | 33 |
| 68 | 9.54796 | 20 | 9.57688 | 23 | 0.42312 | 9.97108 | 32 |
| 69 | 9.54816 | 20 | 9.57711 | 23 | 0.42289 | 9.97105 | 31 |
| 70 | 9.54836 | 20 | 9.57734 | 23 | 0.42266 | 9.97102 | 30 |
| 71 | 9.54856 | 20 | 9.57757 | 23 | 0.42243 | 9.97099 | 29 |
| 72 | 9.54876 | 20 | 9.57780 | 23 | 0.42220 | 9.97096 | 28 |
| 73 | 9.54896 | 20 | 9.57803 | 23 | 0.42197 | 9.97093 | 27 |
| 74 | 9.54916 | 20 | 9.57826 | 23 | 0.42174 | 9.97090 | 26 |
| 75 | 9.54936 | 20 | 9.57849 | 22 | 0.42151 | 9.97087 | 25 |
| 76 | 9.54956 | 20 | 9.57871 | 23 | 0.42129 | 9.97085 | 24 |
| 77 | 9.54976 | 20 | 9.57894 | 23 | 0.42106 | 9.97082 | 23 |
| 78 | 9.54996 | 20 | 9.57917 | 23 | 0.42083 | 9.97079 | 22 |
| 79 | 9.55016 | 20 | 9.57940 | 23 | 0.42060 | 9.97076 | 21 |
| 80 | 9.55036 | 20 | 9.57963 | 23 | 0.42037 | 9.97073 | 20 |
| 81 | 9.55056 | 20 | 9.57986 | 23 | 0.42014 | 9.97070 | 19 |
| 82 | 9.55076 | 20 | 9.58009 | 22 | 0.41991 | 9.97067 | 18 |
| 83 | 9.55096 | 20 | 9.58031 | 23 | 0.41969 | 9.97064 | 17 |
| 84 | 9.55116 | 20 | 9.58054 | 23 | 0.41946 | 9.97062 | 16 |
| 85 | 9.55136 | 19 | 9.58077 | 23 | 0.41923 | 9.97059 | 15 |
| 86 | 9.55155 | 20 | 9.58100 | 22 | 0.41900 | 9.97056 | 14 |
| 87 | 9.55175 | 20 | 9.58122 | 23 | 0.41878 | 9.97053 | 13 |
| 88 | 9.55195 | 20 | 9.58145 | 23 | 0.41855 | 9.97050 | 12 |
| 89 | 9.55215 | 20 | 9.58168 | 23 | 0.41832 | 9.97047 | 11 |
| 90 | 9.55235 | 20 | 9.58191 | 22 | 0.41809 | 9.97044 | 10 |
| 91 | 9.55255 | 20 | 9.58213 | 23 | 0.41787 | 9.97041 | 09 |
| 92 | 9.55275 | 19 | 9.58236 | 23 | 0.41764 | 9.97038 | 08 |
| 93 | 9.55294 | 20 | 9.58259 | 23 | 0.41741 | 9.97036 | 07 |
| 94 | 9.55314 | 20 | 9.58282 | 22 | 0.41718 | 9.97033 | 06 |
| 95 | 9.55334 | 20 | 9.58304 | 23 | 0.41696 | 9.97030 | 05 |
| 96 | 9.55354 | 20 | 9.58327 | 23 | 0.41673 | 9.97027 | 04 |
| 97 | 9.55374 | 19 | 9.58350 | 22 | 0.41650 | 9.97024 | 03 |
| 98 | 9.55393 | 20 | 9.58372 | 23 | 0.41628 | 9.97021 | 02 |
| 99 | 9.55413 | 20 | 9.58395 | 23 | 0.41605 | 9.97018 | 01 |
| 100 | 9.55433 | | 9.58418 | | 0.41582 | 9.97015 | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | |

P. P.

| 23 | |
|---|---|
| 1 | 2.3 |
| 2 | 4.6 |
| 3 | 6.9 |
| 4 | 9.2 |
| 5 | 11.5 |
| 6 | 13.8 |
| 7 | 16.1 |
| 8 | 18.4 |
| 9 | 20.7 |

| 22 | |
|---|---|
| 1 | 2.2 |
| 2 | 4.4 |
| 3 | 6.6 |
| 4 | 8.8 |
| 5 | 11.0 |
| 6 | 13.2 |
| 7 | 15.4 |
| 8 | 17.6 |
| 9 | 19.8 |

*

| 20 | |
|---|---|
| 1 | 2.0 |
| 2 | 4.0 |
| 3 | 6.0 |
| 4 | 8.0 |
| 5 | 10.0 |
| 6 | 12.0 |
| 7 | 14.0 |
| 8 | 16.0 |
| 9 | 18.0 |

| 19 | |
|---|---|
| 1 | 1.9 |
| 2 | 3.8 |
| 3 | 5.7 |
| 4 | 7.6 |
| 5 | 9.5 |
| 6 | 11.4 |
| 7 | 13.3 |
| 8 | 15.2 |
| 9 | 17.1 |

P. P.

# 21°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.55433 | 20 | 9.58418 | 22 | 0.41582 | 9.97015 | 3 | 100 |
| 01 | 9.55453 | 19 | 9.58440 | 23 | 0.41560 | 9.97012 | 3 | 99 |
| 02 | 9.55472 | 20 | 9.58463 | 23 | 0.41537 | 9.97009 | 3 | 98 |
| 03 | 9.55492 | 20 | 9.58486 | 22 | 0.41514 | 9.97006 | 2 | 97 |
| 04 | 9.55512 | 20 | 9.58508 | 23 | 0.41492 | 9.97004 | 3 | 96 |
| 05 | 9.55532 | 19 | 9.58531 | 23 | 0.41469 | 9.97001 | 3 | 95 |
| 06 | 9.55551 | 20 | 9.58554 | 22 | 0.41446 | 9.96998 | 3 | 94 |
| 07 | 9.55571 | 20 | 9.58576 | 23 | 0.41424 | 9.96995 | 3 | 93 |
| 08 | 9.55591 | 19 | 9.58599 | 22 | 0.41401 | 9.96992 | 3 | 92 |
| 09 | 9.55610 | 20 | 9.58621 | 23 | 0.41379 | 9.96989 | 3 | 91 |
| 10 | 9.55630 | 20 | 9.58644 | 22 | 0.41356 | 9.96986 | 3 | 90 |
| 11 | 9.55650 | 19 | 9.58666 | 23 | 0.41334 | 9.96983 | 3 | 89 |
| 12 | 9.55669 | 20 | 9.58689 | 23 | 0.41311 | 9.96980 | 3 | 88 |
| 13 | 9.55689 | 19 | 9.58712 | 22 | 0.41288 | 9.96977 | 3 | 87 |
| 14 | 9.55708 | 20 | 9.58734 | 23 | 0.41266 | 9.96974 | 3 | 86 |
| 15 | 9.55728 | 20 | 9.58757 | 22 | 0.41243 | 9.96971 | 3 | 85 |
| 16 | 9.55748 | 19 | 9.58779 | 23 | 0.41221 | 9.96968 | 3 | 84 |
| 17 | 9.55767 | 20 | 9.58802 | 22 | 0.41198 | 9.96965 | 2 | 83 |
| 18 | 9.55787 | 19 | 9.58824 | 23 | 0.41176 | 9.96963 | 3 | 82 |
| 19 | 9.55806 | 20 | 9.58847 | 22 | 0.41153 | 9.96960 | 3 | 81 |
| 20 | 9.55826 | 19 | 9.58869 | 23 | 0.41131 | 9.96957 | 3 | 80 |
| 21 | 9.55845 | 20 | 9.58892 | 22 | 0.41108 | 9.96954 | 3 | 79 |
| 22 | 9.55865 | 19 | 9.58914 | 23 | 0.41086 | 9.96951 | 3 | 78 |
| 23 | 9.55884 | 20 | 9.58937 | 22 | 0.41063 | 9.96948 | 3 | 77 |
| 24 | 9.55904 | 19 | 9.58959 | 22 | 0.41041 | 9.96945 | 3 | 76 |
| 25 | 9.55923 | 20 | 9.58981 | 23 | 0.41019 | 9.96942 | 3 | 75 |
| 26 | 9.55943 | 19 | 9.59004 | 22 | 0.40996 | 9.96939 | 3 | 74 |
| 27 | 9.55962 | 20 | 9.59026 | 23 | 0.40974 | 9.96936 | 3 | 73 |
| 28 | 9.55982 | 19 | 9.59049 | 22 | 0.40951 | 9.96933 | 3 | 72 |
| 29 | 9.56001 | 20 | 9.59071 | 23 | 0.40929 | 9.96930 | 3 | 71 |
| 30 | 9.56021 | 19 | 9.59094 | 22 | 0.40906 | 9.96927 | 3 | 70 |
| 31 | 9.56040 | 20 | 9.59116 | 22 | 0.40884 | 9.96924 | 3 | 69 |
| 32 | 9.56060 | 19 | 9.59138 | 23 | 0.40862 | 9.96921 | 3 | 68 |
| 33 | 9.56079 | 19 | 9.59161 | 22 | 0.40839 | 9.96918 | 3 | 67 |
| 34 | 9.56098 | 20 | 9.59183 | 22 | 0.40817 | 9.96915 | 3 | 66 |
| 35 | 9.56118 | 19 | 9.59205 | 23 | 0.40795 | 9.96912 | 3 | 65 |
| 36 | 9.56137 | 20 | 9.59228 | 22 | 0.40772 | 9.96909 | 3 | 64 |
| 37 | 9.56157 | 19 | 9.59250 | 22 | 0.40750 | 9.96906 | 2 | 63 |
| 38 | 9.56176 | 19 | 9.59272 | 23 | 0.40728 | 9.96904 | 3 | 62 |
| 39 | 9.56195 | 20 | 9.59295 | 22 | 0.40705 | 9.96901 | 3 | 61 |
| 40 | 9.56215 | 19 | 9.59317 | 22 | 0.40683 | 9.96898 | 3 | 60 |
| 41 | 9.56234 | 19 | 9.59339 | 23 | 0.40661 | 9.96895 | 3 | 59 |
| 42 | 9.56253 | 20 | 9.59362 | 22 | 0.40638 | 9.96892 | 3 | 58 |
| 43 | 9.56273 | 19 | 9.59384 | 22 | 0.40616 | 9.96889 | 3 | 57 |
| 44 | 9.56292 | 19 | 9.59406 | 23 | 0.40594 | 9.96886 | 3 | 56 |
| 45 | 9.56311 | 19 | 9.59429 | 22 | 0.40571 | 9.96883 | 3 | 55 |
| 46 | 9.56330 | 20 | 9.59451 | 22 | 0.40549 | 9.96880 | 3 | 54 |
| 47 | 9.56350 | 19 | 9.59473 | 22 | 0.40527 | 9.96877 | 3 | 53 |
| 48 | 9.56369 | 19 | 9.59495 | 23 | 0.40505 | 9.96874 | 3 | 52 |
| 49 | 9.56388 | 20 | 9.59518 | 22 | 0.40482 | 9.96871 | 3 | 51 |
| 50 | 9.56408 | | 9.59540 | | 0.40460 | 9.96868 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 23 | 22 | 20 | 19 | 3 |
|---|---|---|---|---|---|
| 1 | 2.3 | 2.2 | 2.0 | 1.9 | 0.3 |
| 2 | 4.6 | 4.4 | 4.0 | 3.8 | 0.6 |
| 3 | 6.9 | 6.6 | 6.0 | 5.7 | 0.9 |
| 4 | 9.2 | 8.8 | 8.0 | 7.6 | 1.2 |
| 5 | 11.5 | 11.0 | 10.0 | 9.5 | 1.5 |
| 6 | 13.8 | 13.2 | 12.0 | 11.4 | 1.8 |
| 7 | 16.1 | 15.4 | 14.0 | 13.3 | 2.1 |
| 8 | 18.4 | 17.6 | 16.0 | 15.2 | 2.4 |
| 9 | 20.7 | 19.8 | 18.0 | 17.1 | 2.7 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.56408 | 19 | 9.59540 | 22 | 0.40460 | 9.96868 | 3 | 50 |
| 51 | 9.56427 | 19 | 9.59562 | 22 | 0.40438 | 9.96865 | 3 | 49 |
| 52 | 9.56446 | 19 | 9.59584 | 22 | 0.40416 | 9.96862 | 3 | 48 |
| 53 | 9.56465 | 19 | 9.59606 | 23 | 0.40394 | 9.96859 | 3 | 47 |
| 54 | 9.56484 | 20 | 9.59629 | 22 | 0.40371 | 9.96856 | 3 | 46 |
| 55 | 9.56504 | 19 | 9.59651 | 22 | 0.40349 | 9.96853 | 3 | 45 |
| 56 | 9.56523 | 19 | 9.59673 | 22 | 0.40327 | 9.96850 | 3 | 44 |
| 57 | 9.56542 | 19 | 9.59695 | 22 | 0.40305 | 9.96847 | 3 | 43 |
| 58 | 9.56561 | 19 | 9.59717 | 22 | 0.40283 | 9.96844 | 3 | 42 |
| 59 | 9.56580 | 19 | 9.59739 | 23 | 0.40261 | 9.96841 | 3 | 41 |
| 60 | 9.56599 | 20 | 9.59762 | 22 | 0.40238 | 9.96838 | 3 | 40 |
| 61 | 9.56619 | 19 | 9.59784 | 22 | 0.40216 | 9.96835 | 3 | 39 |
| 62 | 9.56638 | 19 | 9.59806 | 22 | 0.40194 | 9.96832 | 3 | 38 |
| 63 | 9.56657 | 19 | 9.59828 | 22 | 0.40172 | 9.96829 | 3 | 37 |
| 64 | 9.56676 | 19 | 9.59850 | 22 | 0.40150 | 9.96826 | 3 | 36 |
| 65 | 9.56695 | 19 | 9.59872 | 22 | 0.40128 | 9.96823 | 3 | 35 |
| 66 | 9.56714 | 19 | 9.59894 | 22 | 0.40106 | 9.96820 | 3 | 34 |
| 67 | 9.56733 | 19 | 9.59916 | 23 | 0.40084 | 9.96817 | 3 | 33 |
| 68 | 9.56752 | 19 | 9.59939 | 22 | 0.40061 | 9.96814 | 3 | 32 |
| 69 | 9.56771 | 19 | 9.59961 | 22 | 0.40039 | 9.96811 | 3 | 31 |
| 70 | 9.56790 | 19 | 9.59983 | 22 | 0.40017 | 9.96808 | 3 | 30 |
| 71 | 9.56809 | 20 | 9.60005 | 22 | 0.39995 | 9.96805 | 3 | 29 |
| 72 | 9.56829 | 19 | 9.60027 | 22 | 0.39973 | 9.96802 | 3 | 28 |
| 73 | 9.56848 | 19 | 9.60049 | 22 | 0.39951 | 9.96799 | 3 | 27 |
| 74 | 9.56867 | 19 | 9.60071 | 22 | 0.39929 | 9.96796 | 3 | 26 |
| 75 | 9.56886 | 19 | 9.60093 | 22 | 0.39907 | 9.96793 | 3 | 25 |
| 76 | 9.56905 | 19 | 9.60115 | 22 | 0.39885 | 9.96790 | 3 | 24 |
| 77 | 9.56924 | 19 | 9.60137 | 22 | 0.39863 | 9.96787 | 3 | 23 |
| 78 | 9.56943 | 18 | 9.60159 | 22 | 0.39841 | 9.96784 | 3 | 22 |
| 79 | 9.56961 | 19 | 9.60181 | 22 | 0.39819 | 9.96781 | 3 | 21 |
| 80 | 9.56980 | 19 | 9.60203 | 22 | 0.39797 | 9.96778 | 4 | 20 |
| 81 | 9.56999 | 19 | 9.60225 | 22 | 0.39775 | 9.96774 | 3 | 19 |
| 82 | 9.57018 | 19 | 9.60247 | 22 | 0.39753 | 9.96771 | 3 | 18 |
| 83 | 9.57037 | 19 | 9.60269 | 22 | 0.39731 | 9.96768 | 3 | 17 |
| 84 | 9.57056 | 19 | 9.60291 | 22 | 0.39709 | 9.96765 | 3 | 16 |
| 85 | 9.57075 | 19 | 9.60313 | 22 | 0.39687 | 9.96762 | 3 | 15 |
| 86 | 9.57094 | 19 | 9.60335 | 22 | 0.39665 | 9.96759 | 3 | 14 |
| 87 | 9.57113 | 19 | 9.60357 | 22 | 0.39643 | 9.96756 | 3 | 13 |
| 88 | 9.57132 | 19 | 9.60379 | 21 | 0.39621 | 9.96753 | 3 | 12 |
| 89 | 9.57151 | 18 | 9.60400 | 22 | 0.39600 | 9.96750 | 3 | 11 |
| 90 | 9.57169 | 19 | 9.60422 | 22 | 0.39578 | 9.96747 | 3 | 10 |
| 91 | 9.57188 | 19 | 9.60444 | 22 | 0.39556 | 9.96744 | 3 | 09 |
| 92 | 9.57207 | 19 | 9.60466 | 22 | 0.39534 | 9.96741 | 3 | 08 |
| 93 | 9.57226 | 19 | 9.60488 | 22 | 0.39512 | 9.96738 | 3 | 07 |
| 94 | 9.57245 | 19 | 9.60510 | 22 | 0.39490 | 9.96735 | 3 | 06 |
| 95 | 9.57264 | 18 | 9.60532 | 22 | 0.39468 | 9.96732 | 3 | 05 |
| 96 | 9.57282 | 19 | 9.60554 | 21 | 0.39446 | 9.96729 | 3 | 04 |
| 97 | 9.57301 | 19 | 9.60575 | 22 | 0.39425 | 9.96726 | 3 | 03 |
| 98 | 9.57320 | 19 | 9.60597 | 22 | 0.39403 | 9.96723 | 3 | 02 |
| 99 | 9.57339 | 19 | 9.60619 | 22 | 0.39381 | 9.96720 | 3 | 01 |
| 100 | 9.57358 | | 9.60641 | | 0.39359 | 9.96717 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 22 | 21 | 19 | 18 | 4 |
|---|---|---|---|---|---|
| 1 | 2.2 | 2.1 | 1.9 | 1.8 | 0.4 |
| 2 | 4.4 | 4.2 | 3.8 | 3.6 | 0.8 |
| 3 | 6.6 | 6.3 | 5.7 | 5.4 | 1.2 |
| 4 | 8.8 | 8.4 | 7.6 | 7.2 | 1.6 |
| 5 | 11.0 | 10.5 | 9.5 | 9.0 | 2.0 |
| 6 | 13.2 | 12.6 | 11.4 | 10.8 | 2.4 |
| 7 | 15.4 | 14.7 | 13.3 | 12.6 | 2.8 |
| 8 | 17.6 | 16.8 | 15.2 | 14.4 | 3.2 |
| 9 | 19.8 | 18.9 | 17.1 | 16.2 | 3.6 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.57358 | 18 | 9.60641 | 22 | 0.39359 | 9.96717 | 3 | 100 |
| 01 | 9.57376 | 19 | 9.60663 | 22 | 0.39337 | 9.96714 | 4 | 99 |
| 02 | 9.57395 | 19 | 9.60685 | 21 | 0.39315 | 9.96710 | 3 | 98 |
| 03 | 9.57414 | 19 | 9.60706 | 22 | 0.39294 | 9.96707 | 3 | 97 |
| 04 | 9.57433 | 18 | 9.60728 | 22 | 0.39272 | 9.96704 | 3 | 96 |
| 05 | 9.57451 | 19 | 9.60750 | 22 | 0.39250 | 9.96701 | 3 | 95 |
| 06 | 9.57470 | 19 | 9.60772 | 22 | 0.39228 | 9.96698 | 3 | 94 |
| 07 | 9.57489 | 18 | 9.60794 | 21 | 0.39206 | 9.96695 | 3 | 93 |
| 08 | 9.57507 | 19 | 9.60815 | 22 | 0.39185 | 9.96692 | 3 | 92 |
| 09 | 9.57526 | 19 | 9.60837 | 22 | 0.39163 | 9.96689 | 3 | 91 |
| 10 | 9.57545 | 18 | 9.60859 | 22 | 0.39141 | 9.96686 | 3 | 90 |
| 11 | 9.57563 | 19 | 9.60881 | 21 | 0.39119 | 9.96683 | 3 | 89 |
| 12 | 9.57582 | 19 | 9.60902 | 22 | 0.39098 | 9.96680 | 3 | 88 |
| 13 | 9.57601 | 18 | 9.60924 | 22 | 0.39076 | 9.96677 | 3 | 87 |
| 14 | 9.57619 | 19 | 9.60946 | 21 | 0.39054 | 9.96674 | 4 | 86 |
| 15 | 9.57638 | 19 | 9.60967 | 22 | 0.39033 | 9.96670 | 3 | 85 |
| 16 | 9.57657 | 18 | 9.60989 | 22 | 0.39011 | 9.96667 | 3 | 84 |
| 17 | 9.57675 | 19 | 9.61011 | 22 | 0.38989 | 9.96664 | 3 | 83 |
| 18 | 9.57694 | 18 | 9.61033 | 21 | 0.38967 | 9.96661 | 3 | 82 |
| 19 | 9.57712 | 19 | 9.61054 | 22 | 0.38946 | 9.96658 | 3 | 81 |
| 20 | 9.57731 | 18 | 9.61076 | 22 | 0.38924 | 9.96655 | 3 | 80 |
| 21 | 9.57749 | 19 | 9.61098 | 21 | 0.38902 | 9.96652 | 3 | 79 |
| 22 | 9.57768 | 19 | 9.61119 | 22 | 0.38881 | 9.96649 | 3 | 78 |
| 23 | 9.57787 | 18 | 9.61141 | 21 | 0.38859 | 9.96646 | 3 | 77 |
| 24 | 9.57805 | 19 | 9.61162 | 22 | 0.38838 | 9.96643 | 3 | 76 |
| 25 | 9.57824 | 18 | 9.61184 | 22 | 0.38816 | 9.96640 | 4 | 75 |
| 26 | 9.57842 | 19 | 9.61206 | 21 | 0.38794 | 9.96636 | 3 | 74 |
| 27 | 9.57861 | 18 | 9.61227 | 22 | 0.38773 | 9.96633 | 3 | 73 |
| 28 | 9.57879 | 19 | 9.61249 | 22 | 0.38751 | 9.96630 | 3 | 72 |
| 29 | 9.57898 | 18 | 9.61271 | 21 | 0.38729 | 9.96627 | 3 | 71 |
| 30 | 9.57916 | 19 | 9.61292 | 22 | 0.38708 | 9.96624 | 3 | 70 |
| 31 | 9.57935 | 18 | 9.61314 | 21 | 0.38686 | 9.96621 | 3 | 69 |
| 32 | 9.57953 | 19 | 9.61335 | 22 | 0.38665 | 9.96618 | 3 | 68 |
| 33 | 9.57972 | 18 | 9.61357 | 21 | 0.38643 | 9.96615 | 3 | 67 |
| 34 | 9.57990 | 18 | 9.61378 | 22 | 0.38622 | 9.96612 | 4 | 66 |
| 35 | 9.58008 | 19 | 9.61400 | 22 | 0.38600 | 9.96608 | 3 | 65 |
| 36 | 9.58027 | 18 | 9.61422 | 21 | 0.38578 | 9.96605 | 3 | 64 |
| 37 | 9.58045 | 19 | 9.61443 | 22 | 0.38557 | 9.96602 | 3 | 63 |
| 38 | 9.58064 | 18 | 9.61465 | 21 | 0.38535 | 9.96599 | 3 | 62 |
| 39 | 9.58082 | 19 | 9.61486 | 22 | 0.38514 | 9.96596 | 3 | 61 |
| 40 | 9.58101 | 18 | 9.61508 | 21 | 0.38492 | 9.96593 | 3 | 60 |
| 41 | 9.58119 | 18 | 9.61529 | 22 | 0.38471 | 9.96590 | 3 | 59 |
| 42 | 9.58137 | 19 | 9.61551 | 21 | 0.38449 | 9.96587 | 4 | 58 |
| 43 | 9.58156 | 18 | 9.61572 | 22 | 0.38428 | 9.96583 | 3 | 57 |
| 44 | 9.58174 | 18 | 9.61594 | 21 | 0.38406 | 9.96580 | 3 | 56 |
| 45 | 9.58192 | 19 | 9.61615 | 22 | 0.38385 | 9.96577 | 3 | 55 |
| 46 | 9.58211 | 18 | 9.61637 | 21 | 0.38363 | 9.96574 | 3 | 54 |
| 47 | 9.58229 | 18 | 9.61658 | 22 | 0.38342 | 9.96571 | 3 | 53 |
| 48 | 9.58247 | 19 | 9.61680 | 21 | 0.38320 | 9.96568 | 3 | 52 |
| 49 | 9.58266 | 18 | 9.61701 | 22 | 0.38299 | 9.96565 | 3 | 51 |
| 50 | 9.58284 | | 9.61722 | | 0.38278 | 9.96562 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 22 | 21 | 19 | 18 | 3 |
|---|---|---|---|---|---|
| 1 | 2.2 | 2.1 | 1.9 | 1.8 | 0.3 |
| 2 | 4.4 | 4.2 | 3.8 | 3.6 | 0.6 |
| 3 | 6.6 | 6.3 | 5.7 | 5.4 | 0.9 |
| 4 | 8.8 | 8.4 | 7.6 | 7.2 | 1.2 |
| 5 | 11.0 | 10.5 | 9.5 | 9.0 | 1.5 |
| 6 | 13.2 | 12.6 | 11.4 | 10.8 | 1.8 |
| 7 | 15.4 | 14.7 | 13.3 | 12.6 | 2.1 |
| 8 | 17.6 | 16.8 | 15.2 | 14.4 | 2.4 |
| 9 | 19.8 | 18.9 | 17.1 | 16.2 | 2.7 |

*

*

| | Sin. | d. | Tang. | d. c | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.58284 | 18 | 9.61722 | 22 | 0.38278 | 9.96562 | 4 | 50 |
| 51 | 9.58302 | 19 | 9.61744 | 21 | 0.38256 | 9.96558 | 3 | 49 |
| 52 | 9.58321 | 18 | 9.61765 | 22 | 0.38235 | 9.96555 | 3 | 48 |
| 53 | 9.58339 | 18 | 9.61787 | 21 | 0.38213 | 9.96552 | 3 | 47 |
| 54 | 9.58357 | 18 | 9.61808 | 22 | 0.38192 | 9.96549 | 3 | 46 |
| 55 | 9.58375 | 19 | 9.61830 | 21 | 0.38170 | 9.96546 | 3 | 45 |
| 56 | 9.58394 | 18 | 9.61851 | 21 | 0.38149 | 9.96543 | 3 | 44 |
| 57 | 9.58412 | 18 | 9.61872 | 22 | 0.38128 | 9.96540 | 4 | 43 |
| 58 | 9.58430 | 18 | 9.61894 | 21 | 0.38106 | 9.96536 | 3 | 42 |
| 59 | 9.58448 | 19 | 9.61915 | 21 | 0.38085 | 9.96533 | 3 | 41 |
| 60 | 9.58467 | 18 | 9.61936 | 22 | 0.38064 | 9.96530 | 3 | 40 |
| 61 | 9.58485 | 18 | 9.61958 | 21 | 0.38042 | 9.96527 | 3 | 39 |
| 62 | 9.58503 | 18 | 9.61979 | 22 | 0.38021 | 9.96524 | 3 | 38 |
| 63 | 9.58521 | 18 | 9.62001 | 21 | 0.37999 | 9.96521 | 4 | 37 |
| 64 | 9.58539 | 18 | 9.62022 | 21 | 0.37978 | 9.96517 | 3 | 36 |
| 65 | 9.58557 | 19 | 9.62043 | 22 | 0.37957 | 9.96514 | 3 | 35 |
| 66 | 9.58576 | 18 | 9.62065 | 21 | 0.37935 | 9.96511 | 3 | 34 |
| 67 | 9.58594 | 18 | 9.62086 | 21 | 0.37914 | 9.96508 | 3 | 33 |
| 68 | 9.58612 | 18 | 9.62107 | 21 | 0.37893 | 9.96505 | 3 | 32 |
| 69 | 9.58630 | 18 | 9.62128 | 22 | 0.37872 | 9.96502 | 4 | 31 |
| 70 | 9.58648 | 18 | 9.62150 | 21 | 0.37850 | 9.96498 | 3 | 30 |
| 71 | 9.58666 | 18 | 9.62171 | 21 | 0.37829 | 9.96495 | 3 | 29 |
| 72 | 9.58684 | 18 | 9.62192 | 22 | 0.37808 | 9.96492 | 3 | 28 |
| 73 | 9.58702 | 19 | 9.62214 | 21 | 0.37786 | 9.96489 | 3 | 27 |
| 74 | 9.58721 | 18 | 9.62235 | 21 | 0.37765 | 9.96486 | 3 | 26 |
| 75 | 9.58739 | 18 | 9.62256 | 21 | 0.37744 | 9.96483 | 4 | 25 |
| 76 | 9.58757 | 18 | 9.62277 | 22 | 0.37723 | 9.96479 | 3 | 24 |
| 77 | 9.58775 | 18 | 9.62299 | 21 | 0.37701 | 9.96476 | 3 | 23 |
| 78 | 9.58793 | 18 | 9.62320 | 21 | 0.37680 | 9.96473 | 3 | 22 |
| 79 | 9.58811 | 18 | 9.62341 | 21 | 0.37659 | 9.96470 | 3 | 21 |
| 80 | 9.58829 | 18 | 9.62362 | 21 | 0.37638 | 9.96467 | 4 | 20 |
| 81 | 9.58847 | 18 | 9.62383 | 22 | 0.37617 | 9.96463 | 3 | 19 |
| 82 | 9.58865 | 18 | 9.62405 | 21 | 0.37595 | 9.96460 | 3 | 18 |
| 83 | 9.58883 | 18 | 9.62426 | 21 | 0.37574 | 9.96457 | 3 | 17 |
| 84 | 9.58901 | 18 | 9.62447 | 21 | 0.37553 | 9.96454 | 3 | 16 |
| 85 | 9.58919 | 18 | 9.62468 | 21 | 0.37532 | 9.96451 | 4 | 15 |
| 86 | 9.58937 | 18 | 9.62489 | 22 | 0.37511 | 9.96447 | 3 | 14 |
| 87 | 9.58955 | 18 | 9.62511 | 21 | 0.37489 | 9.96444 | 3 | 13 |
| 88 | 9.58973 | 18 | 9.62532 | 21 | 0.37468 | 9.96441 | 3 | 12 |
| 89 | 9.58991 | 18 | 9.62553 | 21 | 0.37447 | 9.96438 | 3 | 11 |
| 90 | 9.59009 | 18 | 9.62574 | 21 | 0.37426 | 9.96435 | 3 | 10 |
| 91 | 9.59027 | 18 | 9.62595 | 21 | 0.37405 | 9.96432 | 4 | 09 |
| 92 | 9.59045 | 18 | 9.62616 | 21 | 0.37384 | 9.96428 | 3 | 08 |
| 93 | 9.59063 | 18 | 9.62637 | 22 | 0.37363 | 9.96425 | 3 | 07 |
| 94 | 9.59081 | 17 | 9.62659 | 21 | 0.37341 | 9.96422 | 3 | 06 |
| 95 | 9.59098 | 18 | 9.62680 | 21 | 0.37320 | 9.96419 | 4 | 05 |
| 96 | 9.59116 | 18 | 9.62701 | 21 | 0.37299 | 9.96415 | 3 | 04 |
| 97 | 9.59134 | 18 | 9.62722 | 21 | 0.37278 | 9.96412 | 3 | 03 |
| 98 | 9.59152 | 18 | 9.62743 | 21 | 0.37257 | 9.96409 | 3 | 02 |
| 99 | 9.59170 | 18 | 9.62764 | 21 | 0.37236 | 9.96406 | 3 | 01 |
| 100 | 9.59188 | | 9.62785 | | 0.37215 | 9.96403 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 22 | 21 | 18 | 17 | 4 |
|---|---|---|---|---|---|
| 1 | 2.2 | 2.1 | 1.8 | 1.7 | 0.4 |
| 2 | 4.4 | 4.2 | 3.6 | 3.4 | 0.8 |
| 3 | 6.6 | 6.3 | 5.4 | 5.1 | 1.2 |
| 4 | 8.8 | 8.4 | 7.2 | 6.8 | 1.6 |
| 5 | 11.0 | 10.5 | 9.0 | 8.5 | 2.0 |
| 6 | 13.2 | 12.6 | 10.8 | 10.2 | 2.4 |
| 7 | 15.4 | 14.7 | 12.6 | 11.9 | 2.8 |
| 8 | 17.6 | 16.8 | 14.4 | 13.6 | 3.2 |
| 9 | 19.8 | 18.9 | 16.2 | 15.3 | 3.6 |

| Min. | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | Min. (65°) |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.60931 | 17 | 9.64858 | 21 | 0.35142 | 9.96073 | 3 | 100 |
| 01 | 9.60948 | 17 | 9.64879 | 20 | 0.35121 | 9.96070 | 4 | 99 |
| 02 | 9.60965 | 17 | 9.64899 | 20 | 0.35101 | 9.96066 | 3 | 98 |
| 03 | 9.60982 | 17 | 9.64919 | 21 | 0.35081 | 9.96063 | 3 | 97 |
| 04 | 9.60999 | 17 | 9.64940 | 20 | 0.35060 | 9.96060 | 4 | 96 |
| 05 | 9.61016 | 17 | 9.64960 | 21 | 0.35040 | 9.96056 | 3 | 95 |
| 06 | 9.61033 | 17 | 9.64981 | 20 | 0.35019 | 9.96053 | 4 | 94 |
| 07 | 9.61050 | 17 | 9.65001 | 20 | 0.34999 | 9.96049 | 3 | 93 |
| 08 | 9.61067 | 17 | 9.65021 | 21 | 0.34979 | 9.96046 | 3 | 92 |
| 09 | 9.61084 | 17 | 9.65042 | 20 | 0.34958 | 9.96043 | 4 | 91 |
| 10 | 9.61101 | 17 | 9.65062 | 20 | 0.34938 | 9.96039 | 3 | 90 |
| 11 | 9.61118 | 17 | 9.65082 | 21 | 0.34918 | 9.96036 | 4 | 89 |
| 12 | 9.61135 | 17 | 9.65103 | 20 | 0.34897 | 9.96032 | 3 | 88 |
| 13 | 9.61152 | 17 | 9.65123 | 20 | 0.34877 | 9.96029 | 3 | 87 |
| 14 | 9.61169 | 17 | 9.65143 | 21 | 0.34857 | 9.96026 | 4 | 86 |
| 15 | 9.61186 | 17 | 9.65164 | 20 | 0.34836 | 9.96022 | 3 | 85 |
| 16 | 9.61203 | 17 | 9.65184 | 20 | 0.34816 | 9.96019 | 4 | 84 |
| 17 | 9.61220 | 16 | 9.65204 | 20 | 0.34796 | 9.96015 | 3 | 83 |
| 18 | 9.61236 | 17 | 9.65224 | 21 | 0.34776 | 9.96012 | 3 | 82 |
| 19 | 9.61253 | 17 | 9.65245 | 20 | 0.34755 | 9.96009 | 4 | 81 |
| 20 | 9.61270 | 17 | 9.65265 | 20 | 0.34735 | 9.96005 | 3 | 80 |
| 21 | 9.61287 | 17 | 9.65285 | 21 | 0.34715 | 9.96002 | 4 | 79 |
| 22 | 9.61304 | 17 | 9.65306 | 20 | 0.34694 | 9.95998 | 3 | 78 |
| 23 | 9.61321 | 17 | 9.65326 | 20 | 0.34674 | 9.95995 | 3 | 77 |
| 24 | 9.61338 | 16 | 9.65346 | 20 | 0.34654 | 9.95992 | 4 | 76 |
| 25 | 9.61354 | 17 | 9.65366 | 21 | 0.34634 | 9.95988 | 3 | 75 |
| 26 | 9.61371 | 17 | 9.65387 | 20 | 0.34613 | 9.95985 | 4 | 74 |
| 27 | 9.61388 | 17 | 9.65407 | 20 | 0.34593 | 9.95981 | 3 | 73 |
| 28 | 9.61405 | 17 | 9.65427 | 20 | 0.34573 | 9.95978 | 4 | 72 |
| 29 | 9.61422 | 16 | 9.65447 | 20 | 0.34553 | 9.95974 | 3 | 71 |
| 30 | 9.61438 | 17 | 9.65467 | 21 | 0.34533 | 9.95971 | 3 | 70 |
| 31 | 9.61455 | 17 | 9.65488 | 20 | 0.34512 | 9.95968 | 4 | 69 |
| 32 | 9.61472 | 17 | 9.65508 | 20 | 0.34492 | 9.95964 | 3 | 68 |
| 33 | 9.61489 | 17 | 9.65528 | 20 | 0.34472 | 9.95961 | 4 | 67 |
| 34 | 9.61506 | 16 | 9.65548 | 20 | 0.34452 | 9.95957 | 3 | 66 |
| 35 | 9.61522 | 17 | 9.65568 | 21 | 0.34432 | 9.95954 | 4 | 65 |
| 36 | 9.61539 | 17 | 9.65589 | 20 | 0.34411 | 9.95950 | 3 | 64 |
| 37 | 9.61556 | 17 | 9.65609 | 20 | 0.34391 | 9.95947 | 3 | 63 |
| 38 | 9.61573 | 16 | 9.65629 | 20 | 0.34371 | 9.95944 | 4 | 62 |
| 39 | 9.61589 | 17 | 9.65649 | 20 | 0.34351 | 9.95940 | 3 | 61 |
| 40 | 9.61606 | 17 | 9.65669 | 20 | 0.34331 | 9.95937 | 4 | 60 |
| 41 | 9.61623 | 16 | 9.65689 | 21 | 0.34311 | 9.95933 | 3 | 59 |
| 42 | 9.61639 | 17 | 9.65710 | 20 | 0.34290 | 9.95930 | 4 | 58 |
| 43 | 9.61656 | 17 | 9.65730 | 20 | 0.34270 | 9.95926 | 3 | 57 |
| 44 | 9.61673 | 16 | 9.65750 | 20 | 0.34250 | 9.95923 | 3 | 56 |
| 45 | 9.61689 | 17 | 9.65770 | 20 | 0.34230 | 9.95920 | 4 | 55 |
| 46 | 9.61706 | 17 | 9.65790 | 20 | 0.34210 | 9.95916 | 3 | 54 |
| 47 | 9.61723 | 16 | 9.65810 | 20 | 0.34190 | 9.95913 | 4 | 53 |
| 48 | 9.61739 | 17 | 9.65830 | 20 | 0.34170 | 9.95909 | 3 | 52 |
| 49 | 9.61756 | 17 | 9.65850 | 20 | 0.34150 | 9.95906 | 4 | 51 |
| 50 | 9.61773 | | 9.65870 | | 0.34130 | 9.95902 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 21 |
|---|---|
| 1 | 2.1 |
| 2 | 4.2 |
| 3 | 6.3 |
| 4 | 8.4 |
| 5 | 10.5 |
| 6 | 12.6 |
| 7 | 14.7 |
| 8 | 16.8 |
| 9 | 18.9 |

| | 20 |
|---|---|
| 1 | 2.0 |
| 2 | 4.0 |
| 3 | 6.0 |
| 4 | 8.0 |
| 5 | 10.0 |
| 6 | 12.0 |
| 7 | 14.0 |
| 8 | 16.0 |
| 9 | 18.0 |

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| | 17 |
|---|---|
| 1 | 1.7 |
| 2 | 3.4 |
| 3 | 5.1 |
| 4 | 6.8 |
| 5 | 8.5 |
| 6 | 10.2 |
| 7 | 11.9 |
| 8 | 13.6 |
| 9 | 15.3 |

| | 16 |
|---|---|
| 1 | 1.6 |
| 2 | 3.2 |
| 3 | 4.8 |
| 4 | 6.4 |
| 5 | 8.0 |
| 6 | 9.6 |
| 7 | 11.2 |
| 8 | 12.8 |
| 9 | 14.4 |

*

| | 8 |
|---|---|
| 1 | 0.3 |
| 2 | 0.6 |
| 3 | 0.9 |
| 4 | 1.2 |
| 5 | 1.5 |
| 6 | 1.8 |
| 7 | 2.1 |
| 8 | 2.4 |
| 9 | 2.7 |

24°

| | Sin. | d. | Tang | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.61773 | 16 | 9.65870 | 20 | 0.34130 | 9.95902 | 3 | 50 |
| 51 | 9.61789 | 17 | 9.65890 | 21 | 0.34110 | 9.95899 | 4 | 49 |
| 52 | 9.61806 | 17 | 9.65911 | 20 | 0.34089 | 9.95895 | 3 | 48 |
| 53 | 9.61823 | 16 | 9.65931 | 20 | 0.34069 | 9.95892 | 4 | 47 |
| 54 | 9.61839 | 17 | 9.65951 | 20 | 0.34049 | 9.95888 | 3 | 46 |
| 55 | 9.61856 | 16 | 9.65971 | 20 | 0.34029 | 9.95885 | 3 | 45 |
| 56 | 9.61872 | 17 | 9.65991 | 20 | 0.34009 | 9.95882 | 4 | 44 |
| 57 | 9.61889 | 17 | 9.66011 | 20 | 0.33989 | 9.95878 | 3 | 43 |
| 58 | 9.61906 | 16 | 9.66031 | 20 | 0.33969 | 9.95875 | 4 | 42 |
| 59 | 9.61922 | 17 | 9.66051 | 20 | 0.33949 | 9.95871 | 3 | 41 |
| 60 | 9.61939 | 16 | 9.66071 | 20 | 0.33929 | 9.95868 | 4 | 40 |
| 61 | 9.61955 | 17 | 9.66091 | 20 | 0.33909 | 9.95864 | 3 | 39 |
| 62 | 9.61972 | 16 | 9.66111 | 20 | 0.33889 | 9.95861 | 4 | 38 |
| 63 | 9.61988 | 17 | 9.66131 | 20 | 0.33869 | 9.95857 | 3 | 37 |
| 64 | 9.62005 | 16 | 9.66151 | 20 | 0.33849 | 9.95854 | 4 | 36 |
| 65 | 9.62021 | 17 | 9.66171 | 20 | 0.33829 | 9.95850 | 3 | 35 |
| 66 | 9.62038 | 16 | 9.66191 | 20 | 0.33809 | 9.95847 | 4 | 34 |
| 67 | 9.62054 | 17 | 9.66211 | 20 | 0.33789 | 9.95843 | 3 | 33 |
| 68 | 9.62071 | 16 | 9.66231 | 20 | 0.33769 | 9.95840 | 4 | 32 |
| 69 | 9.62087 | 17 | 9.66251 | 20 | 0.33749 | 9.95836 | 3 | 31 |
| 70 | 9.62104 | 16 | 9.66271 | 20 | 0.33729 | 9.95833 | 4 | 30 |
| 71 | 9.62120 | 17 | 9.66291 | 20 | 0.33709 | 9.95829 | 3 | 29 |
| 72 | 9.62137 | 16 | 9.66311 | 20 | 0.33689 | 9.95826 | 4 | 28 |
| 73 | 9.62153 | 17 | 9.66331 | 20 | 0.33669 | 9.95822 | 3 | 27 |
| 74 | 9.62170 | 16 | 9.66351 | 20 | 0.33649 | 9.95819 | 4 | 26 |
| 75 | 9.62186 | 17 | 9.66371 | 20 | 0.33629 | 9.95815 | 3 | 25 |
| 76 | 9.62203 | 16 | 9.66391 | 20 | 0.33609 | 9.95812 | 4 | 24 |
| 77 | 9.62219 | 16 | 9.66411 | 19 | 0.33589 | 9.95808 | 3 | 23 |
| 78 | 9.62235 | 17 | 9.66430 | 20 | 0.33570 | 9.95805 | 4 | 22 |
| 79 | 9.62252 | 16 | 9.66450 | 20 | 0.33550 | 9.95801 | 3 | 21 |
| 80 | 9.62268 | 17 | 9.66470 | 20 | 0.33530 | 9.95798 | 4 | 20 |
| 81 | 9.62285 | 16 | 9.66490 | 20 | 0.33510 | 9.95794 | 3 | 19 |
| 82 | 9.62301 | 16 | 9.66510 | 20 | 0.33490 | 9.95791 | 4 | 18 |
| 83 | 9.62317 | 17 | 9.66530 | 20 | 0.33470 | 9.95787 | 3 | 17 |
| 84 | 9.62334 | 16 | 9.66550 | 20 | 0.33450 | 9.95784 | 4 | 16 |
| 85 | 9.62350 | 17 | 9.66570 | 20 | 0.33430 | 9.95780 | 3 | 15 |
| 86 | 9.62367 | 16 | 9.66590 | 19 | 0.33410 | 9.95777 | 4 | 14 |
| 87 | 9.62383 | 16 | 9.66609 | 20 | 0.33391 | 9.95773 | 3 | 13 |
| 88 | 9.62399 | 17 | 9.66629 | 20 | 0.33371 | 9.95770 | 4 | 12 |
| 89 | 9.62416 | 16 | 9.66649 | 20 | 0.33351 | 9.95766 | 3 | 11 |
| 90 | 9.62432 | 16 | 9.66669 | 20 | 0.33331 | 9.95763 | 4 | 10 |
| 91 | 9.62448 | 17 | 9.66689 | 20 | 0.33311 | 9.95759 | 3 | 09 |
| 92 | 9.62465 | 16 | 9.66709 | 20 | 0.33291 | 9.95756 | 4 | 08 |
| 93 | 9.62481 | 16 | 9.66729 | 19 | 0.33271 | 9.95752 | 3 | 07 |
| 94 | 9.62497 | 16 | 9.66748 | 20 | 0.33252 | 9.95749 | 4 | 06 |
| 95 | 9.62513 | 17 | 9.66768 | 20 | 0.33232 | 9.95745 | 3 | 05 |
| 96 | 9.62530 | 16 | 9.66788 | 20 | 0.33212 | 9.95742 | 4 | 04 |
| 97 | 9.62546 | 16 | 9.66808 | 20 | 0.33192 | 9.95738 | 3 | 03 |
| 98 | 9.62562 | 17 | 9.66828 | 19 | 0.33172 | 9.95735 | 4 | 02 |
| 99 | 9.62579 | 16 | 9.66847 | 20 | 0.33153 | 9.95731 | 3 | 01 |
| 100 | 9.62595 | | 9.66867 | | 0.33133 | 9.95728 | | 00 |
| | Cos | d. | Cot. | d. c. | Tang. | Sin. | d. | |

| P. P. | |
|---|---|
| | 20 |
| 1 | 2.0 |
| 2 | 4.0 |
| 3 | 6.0 |
| 4 | 8.0 |
| 5 | 10.0 |
| 6 | 12.0 |
| 7 | 14.0 |
| 8 | 16.0 |
| 9 | 18.0 |
| | 19 |
| 1 | 1.9 |
| 2 | 3.8 |
| 3 | 5.7 |
| 4 | 7.6 |
| 5 | 9.5 |
| 6 | 11.4 |
| 7 | 13.3 |
| 8 | 15.2 |
| 9 | 17.1 |
| | * |
| | 17 |
| 1 | 1.7 |
| 2 | 3.4 |
| 3 | 5.1 |
| 4 | 6.8 |
| 5 | 8.5 |
| 6 | 10.2 |
| 7 | 11.9 |
| 8 | 13.6 |
| 9 | 15.3 |
| | 16 |
| 1 | 1.6 |
| 2 | 3.2 |
| 3 | 4.8 |
| 4 | 6.4 |
| 5 | 8.0 |
| 6 | 9.6 |
| 7 | 11.2 |
| 8 | 12.8 |
| 9 | 14.4 |
| | * |
| | 4 |
| 1' | 0.4 |
| 2 | 0.8 |
| 3 | 1.2 |
| 4 | 1.6 |
| 5 | 2.0 |
| 6 | 2.4 |
| 7 | 2.8 |
| 8 | 3.2 |
| 9 | 3.6 |

65°

# 25°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.62595 | 16 | 9.66867 | 20 | 0.33133 | 9.95728 | 4 | 100 |
| 01 | 9.62611 | 16 | 9.66887 | 20 | 0.33113 | 9.95724 | 4 | 99 |
| 02 | 9.62627 | 17 | 9.66907 | 20 | 0.33093 | 9.95720 | 3 | 98 |
| 03 | 9.62644 | 16 | 9.66927 | 19 | 0.33073 | 9.95717 | 4 | 97 |
| 04 | 9.62660 | 16 | 9.66946 | 20 | 0.33054 | 9.95713 | 3 | 96 |
| 05 | 9.62676 | 16 | 9.66966 | 20 | 0.33034 | 9.95710 | 4 | 95 |
| 06 | 9.62692 | 16 | 9.66986 | 20 | 0.33014 | 9.95706 | 3 | 94 |
| 07 | 9.62708 | 17 | 9.67006 | 19 | 0.32994 | 9.95703 | 4 | 93 |
| 08 | 9.62725 | 16 | 9.67025 | 20 | 0.32975 | 9.95699 | 3 | 92 |
| 09 | 9.62741 | 16 | 9.67045 | 20 | 0.32955 | 9.95696 | 4 | 91 |
| 10 | 9.62757 | 16 | 9.67065 | 20 | 0.32935 | 9.95692 | 3 | 90 |
| 11 | 9.62773 | 16 | 9.67085 | 19 | 0.32915 | 9.95689 | 4 | 89 |
| 12 | 9.62789 | 17 | 9.67104 | 20 | 0.32896 | 9.95685 | 4 | 88 |
| 13 | 9.62806 | 16 | 9.67124 | 20 | 0.32876 | 9.95681 | 3 | 87 |
| 14 | 9.62822 | 16 | 9.67144 | 19 | 0.32856 | 9.95678 | 4 | 86 |
| 15 | 9.62838 | 16 | 9.67163 | 20 | 0.32837 | 9.95674 | 3 | 85 |
| 16 | 9.62854 | 16 | 9.67183 | 20 | 0.32817 | 9.95671 | 4 | 84 |
| 17 | 9.62870 | 16 | 9.67203 | 20 | 0.32797 | 9.95667 | 3 | 83 |
| 18 | 9.62886 | 16 | 9.67223 | 19 | 0.32777 | 9.95664 | 4 | 82 |
| 19 | 9.62902 | 16 | 9.67242 | 20 | 0.32758 | 9.95660 | 3 | 81 |
| 20 | 9.62918 | 17 | 9.67262 | 20 | 0.32738 | 9 95657 | 4 | 80 |
| 21 | 9.62935 | 16 | 9.67282 | 19 | 0.32718 | 9.95653 | 4 | 79 |
| 22 | 9.62951 | 16 | 9.67301 | 20 | 0.32699 | 9.95649 | 3 | 78 |
| 23 | 9.62967 | 16 | 9.67321 | 20 | 0.32679 | 9.95646 | 4 | 77 |
| 24 | 9.62983 | 16 | 9.67341 | 19 | 0.32659 | 9.95642 | 3 | 76 |
| 25 | 9.62999 | 16 | 9.67360 | 20 | 0.32640 | 9.95639 | 4 | 75 |
| 26 | 9.63015 | 16 | 9.67380 | 19 | 0.32620 | 9.95635 | 3 | 74 |
| 27 | 9.63031 | 16 | 9.67399 | 20 | 0.32601 | 9.95632 | 4 | 73 |
| 28 | 9.63047 | 16 | 9.67419 | 20 | 0.32581 | 9.95628 | 4 | 72 |
| 29 | 9.63063 | 16 | 9.67439 | 19 | 0.32561 | 9.95624 | 3 | 71 |
| 30 | 9.63079 | 16 | 9.67458 | 20 | 0.32542 | 9.95621 | 4 | 70 |
| 31 | 9.63095 | 16 | 9.67478 | 20 | 0.32522 | 9.95617 | 3 | 69 |
| 32 | 9.63111 | 16 | 9.67498 | 19 | 0.32502 | 9.95614 | 4 | 68 |
| 33 | 9.63127 | 16 | 9.67517 | 20 | 0.32483 | 9.95610 | 4 | 67 |
| 34 | 9.63143 | 16 | 9.67537 | 19 | 0.32463 | 9.95606 | 3 | 66 |
| 35 | 9.63159 | 16 | 9.67556 | 20 | 0.32444 | 9.95603 | 4 | 65 |
| 36 | 9.63175 | 16 | 9.67576 | 20 | 0.32424 | 9.95599 | 3 | 64 |
| 37 | 9.63191 | 16 | 9.67596 | 19 | 0.32404 | 9.95596 | 4 | 63 |
| 38 | 9.63207 | 16 | 9.67615 | 20 | 0.32385 | 9.95592 | 4 | 62 |
| 39 | 9.63223 | 16 | 9.67635 | 19 | 0.32365 | 9.95588 | 3 | 61 |
| 40 | 9.63239 | 16 | 9.67654 | 20 | 0.32346 | 9.95585 | 4 | 60 |
| 41 | 9.63255 | 16 | 9.67674 | 19 | 0.32326 | 9.95581 | 3 | 59 |
| 42 | 9.63271 | 16 | 9.67693 | 20 | 0.32307 | 9.95578 | 4 | 58 |
| 43 | 9.63287 | 16 | 9.67713 | 19 | 0.32287 | 9.95574 | 4 | 57 |
| 44 | 9.63303 | 16 | 9.67732 | 20 | 0.32268 | 9.95570 | 3 | 56 |
| 45 | 9.63319 | 16 | 9.67752 | 20 | 0.32248 | 9.95567 | 4 | 55 |
| 46 | 9.63335 | 16 | 9.67772 | 19 | 0.32228 | 9.95563 | 3 | 54 |
| 47 | 9.63351 | 16 | 9.67791 | 20 | 0.32209 | 9.95560 | 4 | 53 |
| 48 | 9.63367 | 16 | 9.67811 | 19 | 0.32189 | 9.95556 | 4 | 52 |
| 49 | 9.63383 | 15 | 9.67830 | 20 | 0.32170 | 9.95552 | 3 | 51 |
| 50 | 9.63398 | | 9.67850 | | 0.32150 | 9.95549 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 20 | 19 | 17 | 16 | 8 |
|---|---|---|---|---|---|
| 1 | 2.0 | 1.9 | 1.7 | 1.6 | 0.3 |
| 2 | 4.0 | 3.8 | 3.4 | 3.2 | 0.6 |
| 3 | 6.0 | 5.7 | 5.1 | 4.8 | 0.9 |
| 4 | 8.0 | 7.6 | 6.8 | 6.4 | 1.2 |
| 5 | 10.0 | 9.5 | 8.5 | 8.0 | 1.5 |
| 6 | 12.0 | 11.4 | 10.2 | 9.6 | 1.8 |
| 7 | 14.0 | 13.3 | 11.9 | 11.2 | 2.1 |
| 8 | 16.0 | 15.2 | 13.6 | 12.8 | 2.4 |
| 9 | 18.0 | 17.1 | 15.3 | 14.4 | 2.7 |

* *

# 64°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | | P. P. |
|---|---|---|---|---|---|---|---|---|---|
| 50 | 9.63398 | 16 | 9.67850 | 19 | 0.32150 | 9.95549 | 4 | 50 | |
| 51 | 9.63414 | 16 | 9.67869 | 20 | 0.32131 | 9.95545 | 3 | 49 | |
| 52 | 9.63430 | 16 | 9.67889 | 19 | 0.32111 | 9.95542 | 4 | 48 | |
| 53 | 9.63446 | 16 | 9.67908 | 20 | 0.32092 | 9.95538 | 4 | 47 | |
| 54 | 9.63462 | 16 | 9.67928 | 19 | 0.32072 | 9.95534 | 3 | 46 | |
| 55 | 9.63478 | 16 | 9.67947 | 20 | 0.32053 | 9.95531 | 4 | 45 | |
| 56 | 9.63494 | 16 | 9.67967 | 19 | 0.32033 | 9.95527 | 4 | 44 | |
| 57 | 9.63510 | 15 | 9.67986 | 19 | 0.32014 | 9.95523 | 3 | 43 | |
| 58 | 9.63525 | 16 | 9.68005 | 20 | 0.31995 | 9.95520 | 4 | 42 | |
| 59 | 9.63541 | 16 | 9.68025 | 19 | 0.31975 | 9.95516 | 3 | 41 | |
| 60 | 9.63557 | 16 | 9.68044 | 20 | 0.31956 | 9.95513 | 4 | 40 | |
| 61 | 9.63573 | 16 | 9.68064 | 19 | 0.31936 | 9.95509 | 4 | 39 | |
| 62 | 9.63589 | 15 | 9.68083 | 20 | 0.31917 | 9.95505 | 3 | 38 | |
| 63 | 9.63604 | 16 | 9.68103 | 19 | 0.31897 | 9.95502 | 4 | 37 | |
| 64 | 9.63620 | 16 | 9.68122 | 20 | 0.31878 | 9.95498 | 4 | 36 | |
| 65 | 9.63636 | 16 | 9.68142 | 19 | 0.31858 | 9.95494 | 3 | 35 | |
| 66 | 9.63652 | 16 | 9.68161 | 19 | 0.31839 | 9.95491 | 4 | 34 | |
| 67 | 9.63668 | 15 | 9.68180 | 20 | 0.31820 | 9.95487 | 4 | 33 | |
| 68 | 9.63683 | 16 | 9.68200 | 19 | 0.31800 | 9.95483 | 3 | 32 | |
| 69 | 9.63699 | 16 | 9.68219 | 20 | 0.31781 | 9.95480 | 4 | 31 | |
| 70 | 9.63715 | 16 | 9.68239 | 19 | 0.31761 | 9.95476 | 3 | 30 | |
| 71 | 9.63731 | 15 | 9.68258 | 19 | 0.31742 | 9.95473 | 4 | 29 | |
| 72 | 9.63746 | 16 | 9.68277 | 20 | 0.31723 | 9.95469 | 4 | 28 | |
| 73 | 9.63762 | 16 | 9.68297 | 19 | 0.31703 | 9.95465 | 3 | 27 | |
| 74 | 9.63778 | 16 | 9.68316 | 20 | 0.31684 | 9.95462 | 4 | 26 | |
| 75 | 9.63794 | 15 | 9.68336 | 19 | 0.31664 | 9.95458 | 4 | 25 | |
| 76 | 9.63809 | 16 | 9.68355 | 19 | 0.31645 | 9.95454 | 3 | 24 | |
| 77 | 9.63825 | 16 | 9.68374 | 20 | 0.31626 | 9.95451 | 4 | 23 | |
| 78 | 9.63841 | 15 | 9.68394 | 19 | 0.31606 | 9.95447 | 4 | 22 | |
| 79 | 9.63856 | 16 | 9.68413 | 19 | 0.31587 | 9.95443 | 3 | 21 | |
| 80 | 9.63872 | 16 | 9.68432 | 20 | 0.31568 | 9.95440 | 4 | 20 | |
| 81 | 9.63888 | 15 | 9.68452 | 19 | 0.31548 | 9.95436 | 4 | 19 | |
| 82 | 9.63903 | 16 | 9.68471 | 19 | 0.31529 | 9.95432 | 3 | 18 | |
| 83 | 9.63919 | 16 | 9.68490 | 20 | 0.31510 | 9.95429 | 4 | 17 | |
| 84 | 9.63935 | 15 | 9.68510 | 19 | 0.31490 | 9.95425 | 4 | 16 | |
| 85 | 9.63950 | 16 | 9.68529 | 19 | 0.31471 | 9.95421 | 3 | 15 | |
| 86 | 9.63966 | 16 | 9.68548 | 20 | 0.31452 | 9.95418 | 4 | 14 | |
| 87 | 9.63982 | 15 | 9.68568 | 19 | 0.31432 | 9.95414 | 4 | 13 | |
| 88 | 9.63997 | 16 | 9.68587 | 19 | 0.31413 | 9.95410 | 3 | 12 | |
| 89 | 9.64013 | 15 | 9.68606 | 20 | 0.31394 | 9.95407 | 4 | 11 | |
| 90 | 9.64028 | 16 | 9.68626 | 19 | 0.31374 | 9.95403 | 4 | 10 | |
| 91 | 9.64044 | 16 | 9.68645 | 19 | 0.31355 | 9.95399 | 3 | 09 | |
| 92 | 9.64060 | 15 | 9.68664 | 19 | 0.31336 | 9.95396 | 4 | 08 | |
| 93 | 9.64075 | 16 | 9.68683 | 20 | 0.31317 | 9.95392 | 4 | 07 | |
| 94 | 9.64091 | 15 | 9.68703 | 19 | 0.31297 | 9.95388 | 4 | 06 | |
| 95 | 9.64106 | 16 | 9.68722 | 19 | 0.31278 | 9.95384 | 3 | 05 | |
| 96 | 9.64122 | 16 | 9.68741 | 19 | 0.31259 | 9.95381 | 4 | 04 | |
| 97 | 9.64138 | 15 | 9.68760 | 20 | 0.31240 | 9.95377 | 4 | 03 | |
| 98 | 9.64153 | 16 | 9.68780 | 19 | 0.31220 | 9.95373 | 4 | 02 | |
| 99 | 9.64169 | 15 | 9.68799 | 19 | 0.31201 | 9.95369 | 3 | 01 | |
| 100 | 9.64184 | | 9.68818 | | 0.31182 | 9.95366 | | 00 | |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | | P. P. |

P. P.

| | 20 | 19 | 16 | 15 | 4 |
|---|---|---|---|---|---|
| 1 | 2.0 | 1.9 | 1.6 | 1.5 | 0.4 |
| 2 | 4.0 | 3.8 | 3.2 | 3.0 | 0.8 |
| 3 | 6.0 | 5.7 | 4.8 | 4.5 | 1.2 |
| 4 | 8.0 | 7.6 | 6.4 | 6.0 | 1.6 |
| 5 | 10.0 | 9.5 | 8.0 | 7.5 | 2.0 |
| 6 | 12.0 | 11.4 | 9.6 | 9.0 | 2.4 |
| 7 | 14.0 | 13.3 | 11.2 | 10.5 | 2.8 |
| 8 | 16.0 | 15.2 | 12.8 | 12.0 | 3.2 |
| 9 | 18.0 | 17.1 | 14.4 | 13.5 | 3.6 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.64184 | 16 | 9.68818 | 19 | 0.31182 | 9.95366 | 4 | 100 |
| 01 | 9.64200 | 15 | 9.68837 | 20 | 0.31163 | 9.95362 | 3 | 99 |
| 02 | 9.64215 | 16 | 9.68857 | 19 | 0.31143 | 9.95359 | 4 | 98 |
| 03 | 9.64231 | 15 | 9.68876 | 19 | 0.31124 | 9.95355 | 4 | 97 |
| 04 | 9.64246 | 16 | 9.68895 | 19 | 0.31105 | 9.95351 | 3 | 96 |
| 05 | 9.64262 | 15 | 9.68914 | 20 | 0.31086 | 9.95348 | 4 | 95 |
| 06 | 9.64277 | 16 | 9.68934 | 19 | 0.31066 | 9.95344 | 4 | 94 |
| 07 | 9.64293 | 15 | 9.68953 | 19 | 0.31047 | 9.95340 | 4 | 93 |
| 08 | 9.64308 | 16 | 9.68972 | 19 | 0.31028 | 9.95336 | 3 | 92 |
| 09 | 9.64324 | 15 | 9.68991 | 19 | 0.31009 | 9.95333 | 4 | 91 |
| 10 | 9.64339 | 16 | 9.69010 | 19 | 0.30990 | 9.95329 | 4 | 90 |
| 11 | 9.64355 | 15 | 9.69029 | 20 | 0.30971 | 9.95325 | 3 | 89 |
| 12 | 9.64370 | 16 | 9.69049 | 19 | 0.30951 | 9.95322 | 4 | 88 |
| 13 | 9.64386 | 15 | 9.69068 | 19 | 0.30932 | 9.95318 | 4 | 87 |
| 14 | 9.64401 | 16 | 9.69087 | 19 | 0.30913 | 9.95314 | 4 | 86 |
| 15 | 9.64417 | 15 | 9.69106 | 19 | 0.30894 | 9.95310 | 3 | 85 |
| 16 | 9.64432 | 15 | 9.69125 | 19 | 0.30875 | 9.95307 | 4 | 84 |
| 17 | 9.64447 | 16 | 9.69144 | 20 | 0.30856 | 9.95303 | 4 | 83 |
| 18 | 9.64463 | 15 | 9.69164 | 19 | 0.30836 | 9.95299 | 4 | 82 |
| 19 | 9.64478 | 16 | 9.69183 | 19 | 0.30817 | 9.95295 | 3 | 81 |
| 20 | 9.64494 | 15 | 9.69202 | 19 | 0.30798 | 9.95292 | 4 | 80 |
| 21 | 9.64509 | 15 | 9.69221 | 19 | 0.30779 | 9.95288 | 4 | 79 |
| 22 | 9.64524 | 16 | 9.69240 | 19 | 0.30760 | 9.95284 | 3 | 78 |
| 23 | 9.64540 | 15 | 9.69259 | 19 | 0.30741 | 9.95281 | 4 | 77 |
| 24 | 9.64555 | 16 | 9.69278 | 20 | 0.30722 | 9.95277 | 4 | 76 |
| 25 | 9.64571 | 15 | 9.69298 | 19 | 0.30702 | 9.95273 | 4 | 75 |
| 26 | 9.64586 | 15 | 9.69317 | 19 | 0.30683 | 9.95269 | 3 | 74 |
| 27 | 9.64601 | 16 | 9.69336 | 19 | 0.30664 | 9.95266 | 4 | 73 |
| 28 | 9.64617 | 15 | 9.69355 | 19 | 0.30645 | 9.95262 | 4 | 72 |
| 29 | 9.64632 | 15 | 9.69374 | 19 | 0.30626 | 9.95258 | 4 | 71 |
| 30 | 9.64647 | 16 | 9.69393 | 19 | 0.30607 | 9.95254 | 3 | 70 |
| 31 | 9.64663 | 15 | 9.69412 | 19 | 0.30588 | 9.95251 | 4 | 69 |
| 32 | 9.64678 | 15 | 9.69431 | 19 | 0.30569 | 9.95247 | 4 | 68 |
| 33 | 9.64693 | 16 | 9.69450 | 19 | 0.30550 | 9.95243 | 4 | 67 |
| 34 | 9.64709 | 15 | 9.69469 | 19 | 0.30531 | 9.95239 | 3 | 66 |
| 35 | 9.64724 | 15 | 9.69488 | 19 | 0.30512 | 9.95236 | 4 | 65 |
| 36 | 9.64739 | 16 | 9.69507 | 19 | 0.30493 | 9.95232 | 4 | 64 |
| 37 | 9.64755 | 15 | 9.69526 | 19 | 0.30474 | 9.95228 | 4 | 63 |
| 38 | 9.64770 | 15 | 9.69545 | 20 | 0.30455 | 9.95224 | 3 | 62 |
| 39 | 9.64785 | 15 | 9.69565 | 19 | 0.30435 | 9.95221 | 4 | 61 |
| 40 | 9.64800 | 16 | 9.69584 | 19 | 0.30416 | 9.95217 | 4 | 60 |
| 41 | 9.64816 | 15 | 9.69603 | 19 | 0.30397 | 9.95213 | 4 | 59 |
| 42 | 9.64831 | 15 | 9.69622 | 19 | 0.30378 | 9.95209 | 3 | 58 |
| 43 | 9.64846 | 15 | 9.69641 | 19 | 0.30359 | 9.95206 | 4 | 57 |
| 44 | 9.64861 | 16 | 9.69660 | 19 | 0.30340 | 9.95202 | 4 | 56 |
| 45 | 9.64877 | 15 | 9.69679 | 19 | 0.30321 | 9.95198 | 4 | 55 |
| 46 | 9.64892 | 15 | 9.69698 | 19 | 0.30302 | 9.95194 | 4 | 54 |
| 47 | 9.64907 | 15 | 9.69717 | 19 | 0.30283 | 9.95190 | 3 | 53 |
| 48 | 9.64922 | 16 | 9.69736 | 19 | 0.30264 | 9.95187 | 4 | 52 |
| 49 | 9.64938 | 15 | 9.69755 | 19 | 0.30245 | 9.95183 | 4 | 51 |
| 50 | 9.64953 | | 9.69774 | | 0.30226 | 9.95179 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 20 | 19 | 16 | 15 | 8 |
|---|---|---|---|---|---|
| 1 | 2.0 | 1.9 | 1.6 | 1.5 | 0.3 |
| 2 | 4.0 | 3.8 | 3.2 | 3.0 | 0.6 |
| 3 | 6.0 | 5.7 | 4.8 | 4.5 | 0.9 |
| 4 | 8.0 | 7.6 | 6.4 | 6.0 | 1.2 |
| 5 | 10.0 | 9.5 | 8.0 | 7.5 | 1.5 |
| 6 | 12.0 | 11.4 | 9.6 | 9.0 | 1.8 |
| 7 | 14.0 | 13.3 | 11.2 | 10.5 | 2.1 |
| 8 | 16.0 | 15.2 | 12.8 | 12.0 | 2.4 |
| 9 | 18.0 | 17.1 | 14.4 | 13.5 | 2.7 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.64953 | 15 | 9.69774 | 19 | 0.30226 | 9.95179 | 4 | 50 |
| 51 | 9.64968 | 15 | 9.69793 | 19 | 0.30207 | 9.95175 | 3 | 49 |
| 52 | 9.64983 | 15 | 9.69812 | 19 | 0.30188 | 9.95172 | 4 | 48 |
| 53 | 9.64998 | 16 | 9.69831 | 19 | 0.30169 | 9.95168 | 4 | 47 |
| 54 | 9.65014 | 15 | 9.69850 | 18 | 0.30150 | 9.95164 | 4 | 46 |
| 55 | 9.65029 | 15 | 9.69868 | 19 | 0.30132 | 9.95160 | 4 | 45 |
| 56 | 9.65044 | 15 | 9.69887 | 19 | 0.30113 | 9.95156 | 3 | 44 |
| 57 | 9.65059 | 15 | 9.69906 | 19 | 0.30094 | 9.95153 | 4 | 43 |
| 58 | 9.65074 | 15 | 9.69925 | 19 | 0.30075 | 9.95149 | 4 | 42 |
| 59 | 9.65089 | 15 | 9.69944 | 19 | 0.30056 | 9.95145 | 4 | 41 |
| 60 | 9.65104 | 16 | 9.69963 | 19 | 0.30037 | 9.95141 | 4 | 40 |
| 61 | 9.65120 | 15 | 9.69982 | 19 | 0.30018 | 9.95137 | 3 | 39 |
| 62 | 9.65135 | 15 | 9.70001 | 19 | 0.29999 | 9.95134 | 4 | 38 |
| 63 | 9.65150 | 15 | 9.70020 | 19 | 0.29980 | 9.95130 | 4 | 37 |
| 64 | 9.65165 | 15 | 9.70039 | 19 | 0.29961 | 9.95126 | 4 | 36 |
| 65 | 9.65180 | 15 | 9.70058 | 19 | 0.29942 | 9.95122 | 4 | 35 |
| 66 | 9.65195 | 15 | 9.70077 | 19 | 0.29923 | 9.95118 | 3 | 34 |
| 67 | 9.65210 | 15 | 9.70096 | 18 | 0.29904 | 9.95115 | 4 | 33 |
| 68 | 9.65225 | 15 | 9.70114 | 19 | 0.29886 | 9.95111 | 4 | 32 |
| 69 | 9.65240 | 15 | 9.70133 | 19 | 0.29867 | 9.95107 | 4 | 31 |
| 70 | 9.65255 | 16 | 9.70152 | 19 | 0.29848 | 9.95103 | 4 | 30 |
| 71 | 9.65271 | 15 | 9.70171 | 19 | 0.29829 | 9.95099 | 3 | 29 |
| 72 | 9.65286 | 15 | 9.70190 | 19 | 0.29810 | 9.95096 | 4 | 28 |
| 73 | 9.65301 | 15 | 9.70209 | 19 | 0.29791 | 9.95092 | 4 | 27 |
| 74 | 9.65316 | 15 | 9.70228 | 19 | 0.29772 | 9.95088 | 4 | 26 |
| 75 | 9.65331 | 15 | 9.70247 | 18 | 0.29753 | 9.95084 | 4 | 25 |
| 76 | 9.65346 | 15 | 9.70265 | 19 | 0.29735 | 9.95080 | 4 | 24 |
| 77 | 9.65361 | 15 | 9.70284 | 19 | 0.29716 | 9.95076 | 3 | 23 |
| 78 | 9.65376 | 15 | 9.70303 | 19 | 0.29697 | 9.95073 | 4 | 22 |
| 79 | 9.65391 | 15 | 9.70322 | 19 | 0.29678 | 9.95069 | 4 | 21 |
| 80 | 9.65406 | 15 | 9.70341 | 19 | 0.29659 | 9.95065 | 4 | 20 |
| 81 | 9.65421 | 15 | 9.70360 | 19 | 0.29640 | 9.95061 | 4 | 19 |
| 82 | 9.65436 | 15 | 9.70379 | 18 | 0.29621 | 9.95057 | 3 | 18 |
| 83 | 9.65451 | 15 | 9.70397 | 19 | 0.29603 | 9.95054 | 4 | 17 |
| 84 | 9.65466 | 15 | 9.70416 | 19 | 0.29584 | 9.95050 | 4 | 16 |
| 85 | 9.65481 | 15 | 9.70435 | 19 | 0.29565 | 9.95046 | 4 | 15 |
| 86 | 9.65496 | 15 | 9.70454 | 19 | 0.29546 | 9.95042 | 4 | 14 |
| 87 | 9.65511 | 15 | 9.70473 | 18 | 0.29527 | 9.95038 | 4 | 13 |
| 88 | 9.65526 | 15 | 9.70491 | 19 | 0.29509 | 9.95034 | 4 | 12 |
| 89 | 9.65541 | 15 | 9.70510 | 19 | 0.29490 | 9.95030 | 3 | 11 |
| 90 | 9.65556 | 15 | 9.70529 | 19 | 0.29471 | 9.95027 | 4 | 10 |
| 91 | 9.65571 | 14 | 9.70548 | 19 | 0.29452 | 9.95023 | 4 | 09 |
| 92 | 9.65585 | 15 | 9.70567 | 18 | 0.29433 | 9.95019 | 4 | 08 |
| 93 | 9.65600 | 15 | 9.70585 | 19 | 0.29415 | 9.95015 | 4 | 07 |
| 94 | 9.65615 | 15 | 9.70604 | 19 | 0.29396 | 9.95011 | 4 | 06 |
| 95 | 9.65630 | 15 | 9.70623 | 19 | 0.29377 | 9.95007 | 3 | 05 |
| 96 | 9.65645 | 15 | 9.70642 | 18 | 0.29358 | 9.95004 | 4 | 04 |
| 97 | 9.65660 | 15 | 9.70660 | 19 | 0.29340 | 9.95000 | 4 | 03 |
| 98 | 9.65675 | 15 | 9.70679 | 19 | 0.29321 | 9.94996 | 4 | 02 |
| 99 | 9.65690 | 15 | 9.70698 | 19 | 0.29302 | 9.94992 | 4 | 01 |
| 100 | 9.65705 | | 9.70717 | | 0.29283 | 9.94988 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 19 | 18 | 15 | 14 | 4 |
|---|---|---|---|---|---|
| 1 | 1.9 | 1.8 | 1.5 | 1.4 | 0.4 |
| 2 | 3.8 | 3.6 | 3.0 | 2.8 | 0.8 |
| 3 | 5.7 | 5.4 | 4.5 | 4.2 | 1.2 |
| 4 | 7.6 | 7.2 | 6.0 | 5.6 | 1.6 |
| 5 | 9.5 | 9.0 | 7.5 | 7.0 | 2.0 |
| 6 | 11.4 | 10.8 | 9.0 | 8.4 | 2.4 |
| 7 | 13.3 | 12.6 | 10.5 | 9.8 | 2.8 |
| 8 | 15.2 | 14.4 | 12.0 | 11.2 | 3.2 |
| 9 | 17.1 | 16.2 | 13.5 | 12.6 | 3.6 |

P. P.

# 27°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.65705 | 15 | 9.70717 | 18 | 0.29283 | 9.94988 | 4 | 100 |
| 01 | 9.65720 | 14 | 9.70735 | 19 | 0.29265 | 9.94984 | 4 | 99 |
| 02 | 9.65734 | 15 | 9.70754 | 19 | 0.29246 | 9.94980 | 4 | 98 |
| 03 | 9.65749 | 15 | 9.70773 | 19 | 0.29227 | 9.94976 | 3 | 97 |
| 04 | 9.65764 | 15 | 9.70792 | 18 | 0.29208 | 9.94973 | 4 | 96 |
| 05 | 9.65779 | 15 | 9.70810 | 19 | 0.29190 | 9.94969 | 4 | 95 |
| 06 | 9.65794 | 15 | 9.70829 | 19 | 0.29171 | 9.94965 | 4 | 94 |
| 07 | 9.65809 | 14 | 9.70848 | 18 | 0.29152 | 9.94961 | 4 | 93 |
| 08 | 9.65823 | 15 | 9.70866 | 19 | 0.29134 | 9.94957 | 4 | 92 |
| 09 | 9.65838 | 15 | 9.70885 | 19 | 0.29115 | 9.94953 | 4 | 91 |
| 10 | 9.65853 | 15 | 9.70904 | 18 | 0.29096 | 9.94949 | 3 | 90 |
| 11 | 9.65868 | 15 | 9.70922 | 19 | 0.29078 | 9.94946 | 4 | 89 |
| 12 | 9.65883 | 15 | 9.70941 | 19 | 0.29059 | 9.94942 | 4 | 88 |
| 13 | 9.65898 | 14 | 9.70960 | 18 | 0.29040 | 9.94938 | 4 | 87 |
| 14 | 9.65912 | 15 | 9.70978 | 19 | 0.29022 | 9.94934 | 4 | 86 |
| 15 | 9.65927 | 15 | 9.70997 | 19 | 0.29003 | 9.94930 | 4 | 85 |
| 16 | 9.65942 | 15 | 9.71016 | 18 | 0.28984 | 9.94926 | 4 | 84 |
| 17 | 9.65957 | 14 | 9.71034 | 19 | 0.28966 | 9.94922 | 4 | 83 |
| 18 | 9.65971 | 15 | 9.71053 | 19 | 0.28947 | 9.94918 | 4 | 82 |
| 19 | 9.65986 | 15 | 9.71072 | 18 | 0.28928 | 9.94914 | 3 | 81 |
| 20 | 9.66001 | 15 | 9.71090 | 19 | 0.28910 | 9.94911 | 4 | 80 |
| 21 | 9.66016 | 14 | 9.71109 | 19 | 0.28891 | 9.94907 | 4 | 79 |
| 22 | 9.66030 | 15 | 9.71128 | 18 | 0.28872 | 9.94903 | 4 | 78 |
| 23 | 9.66045 | 15 | 9.71146 | 19 | 0.28854 | 9.94899 | 4 | 77 |
| 24 | 9.66060 | 15 | 9.71165 | 19 | 0.28835 | 9.94895 | 4 | 76 |
| 25 | 9.66075 | 14 | 9.71184 | 18 | 0.28816 | 9.94891 | 4 | 75 |
| 26 | 9.66089 | 15 | 9.71202 | 19 | 0.28798 | 9.94887 | 4 | 74 |
| 27 | 9.66104 | 15 | 9.71221 | 18 | 0.28779 | 9.94883 | 4 | 73 |
| 28 | 9.66119 | 14 | 9.71239 | 19 | 0.28761 | 9.94879 | 4 | 72 |
| 29 | 9.66133 | 15 | 9.71258 | 19 | 0.28742 | 9.94875 | 4 | 71 |
| 30 | 9.66148 | 15 | 9.71277 | 18 | 0.28723 | 9.94871 | 3 | 70 |
| 31 | 9.66163 | 14 | 9.71295 | 19 | 0.28705 | 9.94868 | 4 | 69 |
| 32 | 9.66177 | 15 | 9.71314 | 18 | 0.28686 | 9.94864 | 4 | 68 |
| 33 | 9.66192 | 15 | 9.71332 | 19 | 0.28668 | 9.94860 | 4 | 67 |
| 34 | 9.66207 | 14 | 9.71351 | 19 | 0.28649 | 9.94856 | 4 | 66 |
| 35 | 9.66221 | 15 | 9.71370 | 18 | 0.28630 | 9.94852 | 4 | 65 |
| 36 | 9.66236 | 15 | 9.71388 | 19 | 0.28612 | 9.94848 | 4 | 64 |
| 37 | 9.66251 | 14 | 9.71407 | 18 | 0.28593 | 9.94844 | 4 | 63 |
| 38 | 9.66265 | 15 | 9.71425 | 19 | 0.28575 | 9.94840 | 4 | 62 |
| 39 | 9.66280 | 15 | 9.71444 | 18 | 0.28556 | 9.94836 | 4 | 61 |
| 40 | 9.66295 | 14 | 9.71462 | 19 | 0.28538 | 9.94832 | 4 | 60 |
| 41 | 9.66309 | 15 | 9.71481 | 18 | 0.28519 | 9.94828 | 4 | 59 |
| 42 | 9.66324 | 14 | 9.71499 | 19 | 0.28501 | 9.94824 | 4 | 58 |
| 43 | 9.66338 | 15 | 9.71518 | 19 | 0.28482 | 9.94820 | 3 | 57 |
| 44 | 9.66353 | 15 | 9.71537 | 18 | 0.28463 | 9.94817 | 4 | 56 |
| 45 | 9.66368 | 14 | 9.71555 | 19 | 0.28445 | 9.94813 | 4 | 55 |
| 46 | 9.66382 | 15 | 9.71574 | 18 | 0.28426 | 9.94809 | 4 | 54 |
| 47 | 9.66397 | 14 | 9.71592 | 19 | 0.28408 | 9.94805 | 4 | 53 |
| 48 | 9.66411 | 15 | 9.71611 | 18 | 0.28389 | 9.94801 | 4 | 52 |
| 49 | 9.66426 | 15 | 9.71629 | 19 | 0.28371 | 9.94797 | 4 | 51 |
| 50 | 9.66441 | | 9.71648 | | 0.28352 | 9.94793 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 19 | 18 | 15 | 14 | 8 |
|---|---|---|---|---|---|
| 1 | 1.9 | 1.8 | 1.5 | 1.4 | 0.3 |
| 2 | 3.8 | 3.6 | 3.0 | 2.8 | 0.6 |
| 3 | 5.7 | 5.4 | 4.5 | 4.2 | 0.9 |
| 4 | 7.6 | 7.2 | 6.0 | 5.6 | 1.2 |
| 5 | 9.5 | 9.0 | 7.5 | 7.0 | 1.5 |
| 6 | 11.4 | 10.8 | 9.0 | 8.4 | 1.8 |
| 7 | 13.3 | 12.6 | 10.5 | 9.8 | 2.1 |
| 8 | 15.2 | 14.4 | 12.0 | 11.2 | 2.4 |
| 9 | 17.1 | 16.2 | 13.5 | 12.6 | 2.7 |

# 62°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.66441 | 14 | 9.71648 | 18 | 0.28352 | 9.94793 | 4 | 50 |
| 51 | 9.66455 | 15 | 9.71666 | 19 | 0.28334 | 9.94789 | 4 | 49 |
| 52 | 9.66470 | 14 | 9.71685 | 18 | 0.28315 | 9.94785 | 4 | 48 |
| 53 | 9.66484 | 15 | 9.71703 | 19 | 0.28297 | 9.94781 | 4 | 47 |
| 54 | 9.66499 | 14 | 9.71722 | 18 | 0.28278 | 9.94777 | 4 | 46 |
| 55 | 9.66513 | 15 | 9.71740 | 19 | 0.28260 | 9.94773 | 4 | 45 |
| 56 | 9.66528 | 14 | 9.71759 | 18 | 0.28241 | 9.94769 | 4 | 44 |
| 57 | 9.66542 | 15 | 9.71777 | 19 | 0.28223 | 9.94765 | 4 | 43 |
| 58 | 9.66557 | 14 | 9.71796 | 18 | 0.28204 | 9.94761 | 4 | 42 |
| 59 | 9.66571 | 15 | 9.71814 | 19 | 0.28186 | 9.94757 | 4 | 41 |
| 60 | 9.66586 | 14 | 9.71833 | 18 | 0.28167 | 9.94753 | 4 | 40 |
| 61 | 9.66600 | 15 | 9.71851 | 18 | 0.28149 | 9.94749 | 4 | 39 |
| 62 | 9.66615 | 14 | 9.71869 | 19 | 0.28131 | 9.94745 | 4 | 38 |
| 63 | 9.66629 | 15 | 9.71888 | 18 | 0.28112 | 9.94741 | 4 | 37 |
| 64 | 9.66644 | 14 | 9.71906 | 19 | 0.28094 | 9.94737 | 3 | 36 |
| 65 | 9.66658 | 15 | 9.71925 | 18 | 0.28075 | 9.94734 | 4 | 35 |
| 66 | 9.66673 | 14 | 9.71943 | 19 | 0.28057 | 9.94730 | 4 | 34 |
| 67 | 9.66687 | 15 | 9.71962 | 18 | 0.28038 | 9.94726 | 4 | 33 |
| 68 | 9.66702 | 14 | 9.71980 | 18 | 0.28020 | 9.94722 | 4 | 32 |
| 69 | 9.66716 | 15 | 9.71998 | 19 | 0.28002 | 9.94718 | 4 | 31 |
| 70 | 9.66731 | 14 | 9.72017 | 18 | 0.27983 | 9.94714 | 4 | 30 |
| 71 | 9.66745 | 14 | 9.72035 | 19 | 0.27965 | 9.94710 | 4 | 29 |
| 72 | 9.66759 | 15 | 9.72054 | 18 | 0.27946 | 9.94706 | 4 | 28 |
| 73 | 9.66774 | 14 | 9.72072 | 19 | 0.27928 | 9.94702 | 4 | 27 |
| 74 | 9.66788 | 15 | 9.72091 | 18 | 0.27909 | 9.94698 | 4 | 26 |
| 75 | 9.66803 | 14 | 9.72109 | 18 | 0.27891 | 9.94694 | 4 | 25 |
| 76 | 9.66817 | 14 | 9.72127 | 19 | 0.27873 | 9.94690 | 4 | 24 |
| 77 | 9.66831 | 15 | 9.72146 | 18 | 0.27854 | 9.94686 | 4 | 23 |
| 78 | 9.66846 | 14 | 9.72164 | 18 | 0.27836 | 9.94682 | 4 | 22 |
| 79 | 9.66860 | 15 | 9.72182 | 19 | 0.27818 | 9.94678 | 4 | 21 |
| 80 | 9.66875 | 14 | 9.72201 | 18 | 0.27799 | 9.94674 | 4 | 20 |
| 81 | 9.66889 | 14 | 9.72219 | 19 | 0.27781 | 9.94670 | 4 | 19 |
| 82 | 9.66903 | 15 | 9.72238 | 18 | 0.27762 | 9.94666 | 4 | 18 |
| 83 | 9.66918 | 14 | 9.72256 | 18 | 0.27744 | 9.94662 | 4 | 17 |
| 84 | 9.66932 | 14 | 9.72274 | 19 | 0.27726 | 9.94658 | 4 | 16 |
| 85 | 9.66946 | 15 | 9.72293 | 18 | 0.27707 | 9.94654 | 4 | 15 |
| 86 | 9.66961 | 14 | 9.72311 | 18 | 0.27689 | 9.94650 | 4 | 14 |
| 87 | 9.66975 | 14 | 9.72329 | 19 | 0.27671 | 9.94646 | 4 | 13 |
| 88 | 9.66989 | 15 | 9.72348 | 18 | 0.27652 | 9.94642 | 4 | 12 |
| 89 | 9.67004 | 14 | 9.72366 | 18 | 0.27634 | 9.94638 | 4 | 11 |
| 90 | 9.67018 | 14 | 9.72384 | 19 | 0.27616 | 9.94634 | 4 | 10 |
| 91 | 9.67032 | 15 | 9.72403 | 18 | 0.27597 | 9.94630 | 4 | 09 |
| 92 | 9.67047 | 14 | 9.72421 | 18 | 0.27579 | 9.94626 | 4 | 08 |
| 93 | 9.67061 | 14 | 9.72439 | 19 | 0.27561 | 9.94622 | 4 | 07 |
| 94 | 9.67075 | 15 | 9.72458 | 18 | 0.27542 | 9.94618 | 4 | 06 |
| 95 | 9.67090 | 14 | 9.72476 | 18 | 0.27524 | 9.94614 | 4 | 05 |
| 96 | 9.67104 | 14 | 9.72494 | 19 | 0.27506 | 9.94610 | 4 | 04 |
| 97 | 9.67118 | 14 | 9.72513 | 18 | 0.27487 | 9.94606 | 4 | 03 |
| 98 | 9.67132 | 15 | 9.72531 | 18 | 0.27469 | 9.94602 | 4 | 02 |
| 99 | 9.67147 | 14 | 9.72549 | 18 | 0.27451 | 9.94598 | 5 | 01 |
| 100 | 9.67161 | | 9.72567 | | 0.27433 | 9.94593 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 19 | 18 | 15 | 14 | 4 |
|---|---|---|---|---|---|
| 1 | 1.9 | 1.8 | 1.5 | 1.4 | 0.4 |
| 2 | 3.8 | 3.6 | 3.0 | 2.8 | 0.8 |
| 3 | 5.7 | 5.4 | 4.5 | 4.2 | 1.2 |
| 4 | 7.6 | 7.2 | 6.0 | 5.6 | 1.6 |
| 5 | 9.5 | 9.0 | 7.5 | 7.0 | 2.0 |
| 6 | 11.4 | 10.8 | 9.0 | 8.4 | 2.4 |
| 7 | 13.3 | 12.6 | 10.5 | 9.8 | 2.8 |
| 8 | 15.2 | 14.4 | 12.0 | 11.2 | 3.2 |
| 9 | 17.1 | 16.2 | 13.5 | 12.6 | 3.6 |

P. P.

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.67161 | 14 | 9.72567 | 19 | 0.27433 | 9.94593 | 4 | 100 |
| 01 | 9.67175 | 14 | 9.72586 | 18 | 0.27414 | 9.94589 | 4 | 99 |
| 02 | 9.67189 | 15 | 9.72604 | 18 | 0.27396 | 9.94585 | 4 | 98 |
| 03 | 9.67204 | 14 | 9.72622 | 19 | 0.27378 | 9.94581 | 4 | 97 |
| 04 | 9.67218 | 14 | 9.72641 | 18 | 0.27359 | 9.94577 | 4 | 96 |
| 05 | 9.67232 | 14 | 9.72659 | 18 | 0.27341 | 9.94573 | 4 | 95 |
| 06 | 9.67246 | 15 | 9.72677 | 18 | 0.27323 | 9.94569 | 4 | 94 |
| 07 | 9.67261 | 14 | 9.72695 | 19 | 0.27305 | 9.94565 | 4 | 93 |
| 08 | 9.67275 | 14 | 9.72714 | 18 | 0.27286 | 9.94561 | 4 | 92 |
| 09 | 9.67289 | 14 | 9.72732 | 18 | 0.27268 | 9.94557 | 4 | 91 |
| 10 | 9.67303 | 14 | 9.72750 | 18 | 0.27250 | 9.94553 | 4 | 90 |
| 11 | 9.67317 | 15 | 9.72768 | 19 | 0.27232 | 9.94549 | 4 | 89 |
| 12 | 9.67332 | 14 | 9.72787 | 18 | 0.27213 | 9.94545 | 4 | 88 |
| 13 | 9.67346 | 14 | 9.72805 | 18 | 0.27195 | 9.94541 | 4 | 87 |
| 14 | 9.67360 | 14 | 9.72823 | 18 | 0.27177 | 9.94537 | 4 | 86 |
| 15 | 9.67374 | 14 | 9.72841 | 18 | 0.27159 | 9.94533 | 4 | 85 |
| 16 | 9.67388 | 14 | 9.72859 | 19 | 0.27141 | 9.94529 | 4 | 84 |
| 17 | 9.67402 | 15 | 9.72878 | 18 | 0.27122 | 9.94525 | 4 | 83 |
| 18 | 9.67417 | 14 | 9.72896 | 18 | 0.27104 | 9.94521 | 4 | 82 |
| 19 | 9.67431 | 14 | 9.72914 | 18 | 0.27086 | 9.94517 | 4 | 81 |
| 20 | 9.67445 | 14 | 9.72932 | 18 | 0.27068 | 9.94513 | 5 | 80 |
| 21 | 9.67459 | 14 | 9.72950 | 19 | 0.27050 | 9.94508 | 4 | 79 |
| 22 | 9.67473 | 14 | 9.72969 | 18 | 0.27031 | 9.94504 | 4 | 78 |
| 23 | 9.67487 | 14 | 9.72987 | 18 | 0.27013 | 9.94500 | 4 | 77 |
| 24 | 9.67501 | 14 | 9.73005 | 18 | 0.26995 | 9.94496 | 4 | 76 |
| 25 | 9.67515 | 15 | 9.73023 | 18 | 0.26977 | 9.94492 | 4 | 75 |
| 26 | 9.67530 | 14 | 9.73041 | 19 | 0.26959 | 9.94488 | 4 | 74 |
| 27 | 9.67544 | 14 | 9.73060 | 18 | 0.26940 | 9.94484 | 4 | 73 |
| 28 | 9.67558 | 14 | 9.73078 | 18 | 0.26922 | 9.94480 | 4 | 72 |
| 29 | 9.67572 | 14 | 9.73096 | 18 | 0.26904 | 9.94476 | 4 | 71 |
| 30 | 9.67586 | 14 | 9.73114 | 18 | 0.26886 | 9.94472 | 4 | 70 |
| 31 | 9.67600 | 14 | 9.73132 | 18 | 0.26868 | 9.94468 | 4 | 69 |
| 32 | 9.67614 | 14 | 9.73150 | 19 | 0.26850 | 9.94464 | 4 | 68 |
| 33 | 9.67628 | 14 | 9.73169 | 18 | 0.26831 | 9.94460 | 5 | 67 |
| 34 | 9.67642 | 14 | 9.73187 | 18 | 0.26813 | 9.94455 | 4 | 66 |
| 35 | 9.67656 | 14 | 9.73205 | 18 | 0.26795 | 9.94451 | 4 | 65 |
| 36 | 9.67670 | 14 | 9.73223 | 18 | 0.26777 | 9.94447 | 4 | 64 |
| 37 | 9.67684 | 14 | 9.73241 | 18 | 0.26759 | 9.94443 | 4 | 63 |
| 38 | 9.67698 | 14 | 9.73259 | 18 | 0.26741 | 9.94439 | 4 | 62 |
| 39 | 9.67712 | 14 | 9.73277 | 18 | 0.26723 | 9.94435 | 4 | 61 |
| 40 | 9.67726 | 14 | 9.73295 | 19 | 0.26705 | 9.94431 | 4 | 60 |
| 41 | 9.67740 | 14 | 9.73314 | 18 | 0.26686 | 9.94427 | 4 | 59 |
| 42 | 9.67754 | 14 | 9.73332 | 18 | 0.26668 | 9.94423 | 4 | 58 |
| 43 | 9.67768 | 14 | 9.73350 | 18 | 0.26650 | 9.94419 | 4 | 57 |
| 44 | 9.67782 | 14 | 9.73368 | 18 | 0.26632 | 9.94415 | 5 | 56 |
| 45 | 9.67796 | 14 | 9.73386 | 18 | 0.26614 | 9.94410 | 4 | 55 |
| 46 | 9.67810 | 14 | 9.73404 | 18 | 0.26596 | 9.94406 | 4 | 54 |
| 47 | 9.67824 | 14 | 9.73422 | 18 | 0.26578 | 9.94402 | 4 | 53 |
| 48 | 9.67838 | 14 | 9.73440 | 18 | 0.26560 | 9.94398 | 4 | 52 |
| 49 | 9.67852 | 14 | 9.73458 | 18 | 0.26542 | 9.94394 | 4 | 51 |
| 50 | 9.67866 | | 9.73476 | | 0.26524 | 9.94390 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 19 | 18 | 15 | 14 | 4 |
|---|---|---|---|---|---|
| 1 | 1.9 | 1.8 | 1.5 | 1.4 | 0.4 |
| 2 | 3.8 | 3.6 | 3.0 | 2.8 | 0.8 |
| 3 | 5.7 | 5.4 | 4.5 | 4.2 | 1.2 |
| 4 | 7.6 | 7.2 | 6.0 | 5.6 | 1.6 |
| 5 | 9.5 | 9.0 | 7.5 | 7.0 | 2.0 |
| 6 | 11.4 | 10.8 | 9.0 | 8.4 | 2.4 |
| 7 | 13.3 | 12.6 | 10.5 | 9.8 | 2.8 |
| 8 | 15.2 | 14.4 | 12.0 | 11.2 | 3.2 |
| 9 | 17.1 | 16.2 | 13.5 | 12.6 | 3.6 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.67866 | 14 | 9.73476 | 19 | 0.26524 | 9.94390 | 4 | 50 |
| 51 | 9.67880 | 14 | 9.73495 | 18 | 0.26505 | 9.94386 | 4 | 49 |
| 52 | 9.67894 | 14 | 9.73513 | 18 | 0.26487 | 9.94382 | 5 | 48 |
| 53 | 9.67908 | 14 | 9.73531 | 18 | 0.26469 | 9.94377 | 4 | 47 |
| 54 | 9.67922 | 14 | 9.73549 | 18 | 0.26451 | 9.94373 | 4 | 46 |
| 55 | 9.67936 | 14 | 9.73567 | 18 | 0.26433 | 9.94369 | 4 | 45 |
| 56 | 9.67950 | 14 | 9.73585 | 18 | 0.26415 | 9.94365 | 4 | 44 |
| 57 | 9.67964 | 14 | 9.73603 | 18 | 0.26397 | 9.94361 | 4 | 43 |
| 58 | 9.67978 | 14 | 9.73621 | 18 | 0.26379 | 9.94357 | 4 | 42 |
| 59 | 9.67992 | 14 | 9.73639 | 18 | 0.26361 | 9.94353 | 4 | 41 |
| 60 | 9.68006 | 14 | 9.73657 | 18 | 0.26343 | 9.94349 | 5 | 40 |
| 61 | 9.68020 | 13 | 9.73675 | 18 | 0.26325 | 9.94344 | 4 | 39 |
| 62 | 9.68033 | 14 | 9.73693 | 18 | 0.26307 | 9.94340 | 4 | 38 |
| 63 | 9.68047 | 14 | 9.73711 | 18 | 0.26289 | 9.94336 | 4 | 37 |
| 64 | 9.68061 | 14 | 9.73729 | 18 | 0.26271 | 9.94332 | 4 | 36 |
| 65 | 9.68075 | 14 | 9.73747 | 18 | 0.26253 | 9.94328 | 4 | 35 |
| 66 | 9.68089 | 14 | 9.73765 | 18 | 0.26235 | 9.94324 | 4 | 34 |
| 67 | 9.68103 | 14 | 9.73783 | 18 | 0.26217 | 9.94320 | 5 | 33 |
| 68 | 9.68117 | 13 | 9.73801 | 18 | 0.26199 | 9.94315 | 4 | 32 |
| 69 | 9.68130 | 14 | 9.73819 | 18 | 0.26181 | 9.94311 | 4 | 31 |
| 70 | 9.68144 | 14 | 9.73837 | 18 | 0.26163 | 9.94307 | 4 | 30 |
| 71 | 9.68158 | 14 | 9.73855 | 18 | 0.26145 | 9.94303 | 4 | 29 |
| 72 | 9.68172 | 14 | 9.73873 | 18 | 0.26127 | 9.94299 | 4 | 28 |
| 73 | 9.68186 | 14 | 9.73891 | 18 | 0.26109 | 9.94295 | 4 | 27 |
| 74 | 9.68200 | 13 | 9.73909 | 18 | 0.26091 | 9.94291 | 5 | 26 |
| 75 | 9.68213 | 14 | 9.73927 | 18 | 0.26073 | 9.94286 | 4 | 25 |
| 76 | 9.68227 | 14 | 9.73945 | 18 | 0.26055 | 9.94282 | 4 | 24 |
| 77 | 9.68241 | 14 | 9.73963 | 18 | 0.26037 | 9.94278 | 4 | 23 |
| 78 | 9.68255 | 14 | 9.73981 | 18 | 0.26019 | 9.94274 | 4 | 22 |
| 79 | 9.68269 | 14 | 9.73999 | 18 | 0.26001 | 9.94270 | 4 | 21 |
| 80 | 9.68283 | 13 | 9.74017 | 18 | 0.25983 | 9.94266 | 5 | 20 |
| 81 | 9.68296 | 14 | 9.74035 | 18 | 0.25965 | 9.94261 | 4 | 19 |
| 82 | 9.68310 | 14 | 9.74053 | 18 | 0.25947 | 9.94257 | 4 | 18 |
| 83 | 9.68324 | 14 | 9.74071 | 18 | 0.25929 | 9.94253 | 4 | 17 |
| 84 | 9.68338 | 13 | 9.74089 | 18 | 0.25911 | 9.94249 | 4 | 16 |
| 85 | 9.68351 | 14 | 9.74107 | 18 | 0.25893 | 9.94245 | 4 | 15 |
| 86 | 9.68365 | 14 | 9.74125 | 17 | 0.25875 | 9.94241 | 5 | 14 |
| 87 | 9.68379 | 14 | 9.74142 | 18 | 0.25858 | 9.94236 | 4 | 13 |
| 88 | 9.68393 | 13 | 9.74160 | 18 | 0.25840 | 9.94232 | 4 | 12 |
| 89 | 9.68406 | 14 | 9.74178 | 18 | 0.25822 | 9.94228 | 4 | 11 |
| 90 | 9.68420 | 14 | 9.74196 | 18 | 0.25804 | 9.94224 | 4 | 10 |
| 91 | 9.68434 | 14 | 9.74214 | 18 | 0.25786 | 9.94220 | 5 | 09 |
| 92 | 9.68448 | 13 | 9.74232 | 18 | 0.25768 | 9.94215 | 4 | 08 |
| 93 | 9.68461 | 14 | 9.74250 | 18 | 0.25750 | 9.94211 | 4 | 07 |
| 94 | 9.68475 | 14 | 9.74268 | 18 | 0.25732 | 9.94207 | 4 | 06 |
| 95 | 9.68489 | 13 | 9.74286 | 18 | 0.25714 | 9.94203 | 4 | 05 |
| 96 | 9.68502 | 14 | 9.74304 | 18 | 0.25696 | 9.94199 | 4 | 04 |
| 97 | 9.68516 | 14 | 9.74322 | 17 | 0.25678 | 9.94195 | 5 | 03 |
| 98 | 9.68530 | 13 | 9.74339 | 18 | 0.25661 | 9.94190 | 4 | 02 |
| 99 | 9.68543 | 14 | 9.74357 | 18 | 0.25643 | 9.94186 | 4 | 01 |
| 100 | 9.68557 | | 9.74375 | | 0.25625 | 9.94182 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 18 | 17 | 14 | 13 | 5 |
|---|---|---|---|---|---|
| 1 | 1.8 | 1.7 | 1.4 | 1.3 | 0.5 |
| 2 | 3.6 | 3.4 | 2.8 | 2.6 | 1.0 |
| 3 | 5.4 | 5.1 | 4.2 | 3.9 | 1.5 |
| 4 | 7.2 | 6.8 | 5.6 | 5.2 | 2.0 |
| 5 | 9.0 | 8.5 | 7.0 | 6.5 | 2.5 |
| 6 | 10.8 | 10.2 | 8.4 | 7.8 | 3.0 |
| 7 | 12.6 | 11.9 | 9.8 | 9.1 | 3.5 |
| 8 | 14.4 | 13.6 | 11.2 | 10.4 | 4.0 |
| 9 | 16.2 | 15.3 | 12.6 | 11.7 | 4.5 |

P. P.

# 29°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.68557 | 14 | 9.74375 | 18 | 0.25625 | 9.94182 | 4 | 100 |
| 01 | 9.68571 | 13 | 9.74393 | 18 | 0.25607 | 9.94178 | 4 | 99 |
| 02 | 9.68584 | 14 | 9.74411 | 18 | 0.25589 | 9.94174 | 5 | 98 |
| 03 | 9.68598 | 14 | 9.74429 | 18 | 0.25571 | 9.94169 | 4 | 97 |
| 04 | 9.68612 | 13 | 9.74447 | 18 | 0.25553 | 9.94165 | 4 | 96 |
| 05 | 9.68625 | 14 | 9.74465 | 17 | 0.25535 | 9.94161 | 4 | 95 |
| 06 | 9.68639 | 14 | 9.74482 | 18 | 0.25518 | 9.94157 | 5 | 94 |
| 07 | 9.68653 | 13 | 9.74500 | 18 | 0.25500 | 9.94152 | 4 | 93 |
| 08 | 9.68666 | 14 | 9.74518 | 18 | 0.25482 | 9.94148 | 4 | 92 |
| 09 | 9.68680 | 14 | 9.74536 | 18 | 0.25464 | 9.94144 | 4 | 91 |
| 10 | 9.68694 | 13 | 9.74554 | 18 | 0.25446 | 9.94140 | 4 | 90 |
| 11 | 9.68707 | 14 | 9.74572 | 17 | 0.25428 | 9.94136 | 5 | 89 |
| 12 | 9.68721 | 13 | 9.74589 | 18 | 0.25411 | 9.94131 | 4 | 88 |
| 13 | 9.68734 | 14 | 9.74607 | 18 | 0.25393 | 9.94127 | 4 | 87 |
| 14 | 9.68748 | 14 | 9.74625 | 18 | 0.25375 | 9.94123 | 4 | 86 |
| 15 | 9.68762 | 13 | 9.74643 | 18 | 0.25357 | 9.94119 | 5 | 85 |
| 16 | 9.68775 | 14 | 9.74661 | 18 | 0.25339 | 9.94114 | 4 | 84 |
| 17 | 9.68789 | 13 | 9.74679 | 17 | 0.25321 | 9.94110 | 4 | 83 |
| 18 | 9.68802 | 14 | 9.74696 | 18 | 0.25304 | 9.94106 | 4 | 82 |
| 19 | 9.68816 | 13 | 9.74714 | 18 | 0.25286 | 9.94102 | 4 | 81 |
| 20 | 9.68829 | 14 | 9.74732 | 18 | 0.25268 | 9.94098 | 5 | 80 |
| 21 | 9.68843 | 14 | 9.74750 | 18 | 0.25250 | 9.94093 | 4 | 79 |
| 22 | 9.68857 | 13 | 9.74768 | 17 | 0.25232 | 9.94089 | 4 | 78 |
| 23 | 9.68870 | 14 | 9.74785 | 18 | 0.25215 | 9.94085 | 4 | 77 |
| 24 | 9.68884 | 13 | 9.74803 | 18 | 0.25197 | 9.94081 | 5 | 76 |
| 25 | 9.68897 | 14 | 9.74821 | 18 | 0.25179 | 9.94076 | 4 | 75 |
| 26 | 9.68911 | 13 | 9.74839 | 17 | 0.25161 | 9.94072 | 4 | 74 |
| 27 | 9.68924 | 14 | 9.74856 | 18 | 0.25144 | 9.94068 | 4 | 73 |
| 28 | 9.68938 | 13 | 9.74874 | 18 | 0.25126 | 9.94064 | 5 | 72 |
| 29 | 9.68951 | 14 | 9.74892 | 18 | 0.25108 | 9.94059 | 4 | 71 |
| 30 | 9.68965 | 13 | 9.74910 | 17 | 0.25090 | 9.94055 | 4 | 70 |
| 31 | 9.68978 | 14 | 9.74927 | 18 | 0.25073 | 9.94051 | 4 | 69 |
| 32 | 9.68992 | 13 | 9.74945 | 18 | 0.25055 | 9.94047 | 5 | 68 |
| 33 | 9.69005 | 14 | 9.74963 | 18 | 0.25037 | 9.94042 | 4 | 67 |
| 34 | 9.69019 | 13 | 9.74981 | 17 | 0.25019 | 9.94038 | 4 | 66 |
| 35 | 9.69032 | 14 | 9.74998 | 18 | 0.25002 | 9.94034 | 4 | 65 |
| 36 | 9.69046 | 13 | 9.75016 | 18 | 0.24984 | 9.94030 | 5 | 64 |
| 37 | 9.69059 | 14 | 9.75034 | 18 | 0.24966 | 9.94025 | 4 | 63 |
| 38 | 9.69073 | 13 | 9.75052 | 17 | 0.24948 | 9.94021 | 4 | 62 |
| 39 | 9.69086 | 14 | 9.75069 | 18 | 0.24931 | 9.94017 | 5 | 61 |
| 40 | 9.69100 | 13 | 9.75087 | 18 | 0.24913 | 9.94012 | 4 | 60 |
| 41 | 9.69113 | 14 | 9.75105 | 18 | 0.24895 | 9.94008 | 4 | 59 |
| 42 | 9.69127 | 13 | 9.75123 | 17 | 0.24877 | 9.94004 | 4 | 58 |
| 43 | 9.69140 | 13 | 9.75140 | 18 | 0.24860 | 9.94000 | 5 | 57 |
| 44 | 9.69153 | 14 | 9.75158 | 18 | 0.24842 | 9.93995 | 4 | 56 |
| 45 | 9.69167 | 13 | 9.75176 | 17 | 0.24824 | 9.93991 | 4 | 55 |
| 46 | 9.69180 | 14 | 9.75193 | 18 | 0.24807 | 9.93987 | 4 | 54 |
| 47 | 9.69194 | 13 | 9.75211 | 18 | 0.24789 | 9.93983 | 5 | 53 |
| 48 | 9.69207 | 13 | 9.75229 | 18 | 0.24771 | 9.93978 | 4 | 52 |
| 49 | 9.69220 | 14 | 9.75247 | 17 | 0.24753 | 9.93974 | 4 | 51 |
| 50 | 9.69234 | | 9.75264 | | 0.24736 | 9.93970 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 18 | 17 | 14 | 13 | 4 |
|---|---|---|---|---|---|
| 1 | 1.8 | 1.7 | 1.4 | 1.3 | 0.4 |
| 2 | 3.6 | 3.4 | 2.8 | 2.6 | 0.8 |
| 3 | 5.4 | 5.1 | 4.2 | 3.9 | 1.2 |
| 4 | 7.2 | 6.8 | 5.6 | 5.2 | 1.6 |
| 5 | 9.0 | 8.5 | 7.0 | 6.5 | 2.0 |
| 6 | 10.8 | 10.2 | 8.4 | 7.8 | 2.4 |
| 7 | 12.6 | 11.9 | 9.8 | 9.1 | 2.8 |
| 8 | 14.4 | 13.6 | 11.2 | 10.4 | 3.2 |
| 9 | 16.2 | 15 3 | 12.6 | 11.7 | 3.6 |

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| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | | P. P. |
|---|---|---|---|---|---|---|---|---|---|
| 50 | 9.69234 | 13 | 9.75264 | 18 | 0.24736 | 9.93970 | 5 | 50 | |
| 51 | 9.69247 | 14 | 9.75282 | 18 | 0.24718 | 9.93965 | 4 | 49 | 18 |
| 52 | 9.69261 | 13 | 9.75300 | 17 | 0.24700 | 9.93961 | 4 | 48 | 1 1.8 |
| 53 | 9.69274 | 13 | 9.75317 | 18 | 0.24683 | 9.93957 | 4 | 47 | 2 3.6 |
| 54 | 9.69287 | 14 | 9.75335 | 18 | 0.24665 | 9.93953 | 5 | 46 | 3 5.4 |
| 55 | 9.69301 | 13 | 9.75353 | 17 | 0.24647 | 9.93948 | 4 | 45 | 4 7.2 |
| 56 | 9.69314 | 14 | 9.75370 | 18 | 0.24630 | 9.93944 | 4 | 44 | 5 9.0 |
| 57 | 9.69328 | 13 | 9.75388 | 18 | 0.24612 | 9.93940 | 5 | 43 | 6 10.8 |
| 58 | 9.69341 | 13 | 9.75406 | 17 | 0.24594 | 9.93935 | 4 | 42 | 7 12.6 |
| 59 | 9.69354 | 14 | 9.75423 | 18 | 0.24577 | 9.93931 | 4 | 41 | 8 14.4 |
| 60 | 9.69368 | 13 | 9.75441 | 18 | 0.24559 | 9.93927 | 5 | 40 | 9 16.2 |
| 61 | 9.69381 | 13 | 9.75459 | 17 | 0.24541 | 9.93922 | 4 | 39 | 17 |
| 62 | 9.69394 | 14 | 9.75476 | 18 | 0.24524 | 9.93918 | 4 | 38 | 1 1.7 |
| 63 | 9.69408 | 13 | 9.75494 | 17 | 0.24506 | 9.93914 | 5 | 37 | 2 3.4 |
| 64 | 9.69421 | 13 | 9.75511 | 18 | 0.24489 | 9.93909 | 4 | 36 | 3 5.1 |
| 65 | 9.69434 | 14 | 9.75529 | 18 | 0.24471 | 9.93905 | 4 | 35 | 4 6.8 |
| 66 | 9.69448 | 13 | 9.75547 | 17 | 0.24453 | 9.93901 | 4 | 34 | 5 8.5 |
| 67 | 9.69461 | 13 | 9.75564 | 18 | 0.24436 | 9.93897 | 5 | 33 | 6 10.2 |
| 68 | 9.69474 | 13 | 9.75582 | 18 | 0.24418 | 9.93892 | 4 | 32 | 7 11.9 |
| 69 | 9.69487 | 14 | 9.75600 | 17 | 0.24400 | 9.93888 | 4 | 31 | 8 13.6 |
| 70 | 9.69501 | 13 | 9.75617 | 18 | 0.24383 | 9.93884 | 5 | 30 | 9 15.3 |
| 71 | 9.69514 | 13 | 9.75635 | 17 | 0.24365 | 9.93879 | 4 | 29 | 14 |
| 72 | 9.69527 | 14 | 9.75652 | 18 | 0.24348 | 9.93875 | 4 | 28 | 1 1.4 |
| 73 | 9.69541 | 13 | 9.75670 | 18 | 0.24330 | 9.93871 | 5 | 27 | 2 2.8 |
| 74 | 9.69554 | 13 | 9.75688 | 17 | 0.24312 | 9.93866 | 4 | 26 | 3 4.2 |
| 75 | 9.69567 | 13 | 9.75705 | 18 | 0.24295 | 9.93862 | 4 | 25 | 4 5.6 |
| 76 | 9.69580 | 14 | 9.75723 | 17 | 0.24277 | 9.93858 | 5 | 24 | 5 7.0 |
| 77 | 9.69594 | 13 | 9.75740 | 18 | 0.24260 | 9.93853 | 4 | 23 | 6 8.4 |
| 78 | 9.69607 | 13 | 9.75758 | 18 | 0.24242 | 9.93849 | 4 | 22 | 7 9.8 |
| 79 | 9.69620 | 13 | 9.75776 | 17 | 0.24224 | 9.93845 | 5 | 21 | 8 11.2 |
| 80 | 9.69633 | 14 | 9.75793 | 18 | 0.24207 | 9.93840 | 4 | 20 | 9 12.6 |
| 81 | 9.69647 | 13 | 9.75811 | 17 | 0.24189 | 9.93836 | 4 | 19 | 13 |
| 82 | 9.69660 | 13 | 9.75828 | 18 | 0.24172 | 9.93832 | 5 | 18 | 1 1.3 |
| 83 | 9.69673 | 13 | 9.75846 | 17 | 0.24154 | 9.93827 | 4 | 17 | 2 2.6 |
| 84 | 9.69686 | 13 | 9.75863 | 18 | 0.24137 | 9.93823 | 4 | 16 | 3 3.9 |
| 85 | 9.69699 | 14 | 9.75881 | 18 | 0.24119 | 9.93819 | 5 | 15 | 4 5.2 |
| 86 | 9.69713 | 13 | 9.75899 | 17 | 0.24101 | 9.93814 | 4 | 14 | 5 6.5 |
| 87 | 9.69726 | 13 | 9.75916 | 18 | 0.24084 | 9.93810 | 5 | 13 | 6 7.8 |
| 88 | 9.69739 | 13 | 9.75934 | 17 | 0.24066 | 9.93805 | 4 | 12 | 7 9.1 |
| 89 | 9.69752 | 13 | 9.75951 | 18 | 0.24049 | 9.93801 | 4 | 11 | 8 10.4 |
| 90 | 9.69765 | 14 | 9.75969 | 17 | 0.24031 | 9.93797 | 5 | 10 | 9 11.7 |
| 91 | 9.69779 | 13 | 9.75986 | 18 | 0.24014 | 9.93792 | 4 | 09 | 5 |
| 92 | 9.69792 | 13 | 9.76004 | 17 | 0.23996 | 9.93788 | 4 | 08 | 1 0.5 |
| 93 | 9.69805 | 13 | 9.76021 | 18 | 0.23979 | 9.93784 | 5 | 07 | 2 1.0 |
| 94 | 9.69818 | 13 | 9.76039 | 17 | 0.23961 | 9.93779 | 4 | 06 | 3 1.5 |
| 95 | 9.69831 | 13 | 9.76056 | 18 | 0.23944 | 9.93775 | 4 | 05 | 4 2.0 |
| 96 | 9.69844 | 14 | 9.76074 | 17 | 0.23926 | 9.93771 | 5 | 04 | 5 2.5 |
| 97 | 9.69858 | 13 | 9.76091 | 18 | 0.23909 | 9.93766 | 4 | 03 | 6 3.0 |
| 98 | 9.69871 | 13 | 9.76109 | 17 | 0.23891 | 9.93762 | 5 | 02 | 7 3.5 |
| 99 | 9.69884 | 13 | 9.76126 | 18 | 0.23874 | 9.93757 | 4 | 01 | 8 4.0 |
| 100 | 9.69897 | | 9.76144 | | 0.23856 | 9.93753 | | 00 | 9 4.5 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | | P. P. |

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| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.69897 | 13 | 9.76144 | 17 | 0.23856 | 9.93753 | 4 | 100 |
| 01 | 9.69910 | 13 | 9.76161 | 18 | 0.23839 | 9.93749 | 5 | 99 |
| 02 | 9.69923 | 13 | 9.76179 | 17 | 0.23821 | 9.93744 | 4 | 98 |
| 03 | 9.69936 | 13 | 9.76196 | 18 | 0.23804 | 9.93740 | 4 | 97 |
| 04 | 9.69949 | 14 | 9.76214 | 17 | 0.23786 | 9.93736 | 5 | 96 |
| 05 | 9.69963 | 13 | 9.76231 | 18 | 0.23769 | 9.93731 | 4 | 95 |
| 06 | 9.69976 | 13 | 9.76249 | 17 | 0.23751 | 9.93727 | 5 | 94 |
| 07 | 9.69989 | 13 | 9.76266 | 18 | 0.23734 | 9.93722 | 4 | 93 |
| 08 | 9.70002 | 13 | 9.76284 | 17 | 0.23716 | 9.93718 | 4 | 92 |
| 09 | 9.70015 | 13 | 9.76301 | 18 | 0.23699 | 9.93714 | 5 | 91 |
| 10 | 9.70028 | 13 | 9.76319 | 17 | 0.23681 | 9.93709 | 4 | 90 |
| 11 | 9.70041 | 13 | 9.76336 | 18 | 0.23664 | 9.93705 | 5 | 89 |
| 12 | 9.70054 | 13 | 9.76354 | 17 | 0.23646 | 9.93700 | 4 | 88 |
| 13 | 9.70067 | 13 | 9.76371 | 18 | 0.23629 | 9.93696 | 4 | 87 |
| 14 | 9.70080 | 13 | 9.76389 | 17 | 0.23611 | 9.93692 | 5 | 86 |
| 15 | 9.70093 | 13 | 9.76406 | 18 | 0.23594 | 9.93687 | 4 | 85 |
| 16 | 9.70106 | 13 | 9.76424 | 17 | 0.23576 | 9.93683 | 5 | 84 |
| 17 | 9.70119 | 13 | 9.76441 | 17 | 0.23559 | 9.93678 | 4 | 83 |
| 18 | 9.70132 | 13 | 9.76458 | 18 | 0.23542 | 9.93674 | 4 | 82 |
| 19 | 9.70145 | 14 | 9.76476 | 17 | 0.23524 | 9.93670 | 5 | 81 |
| 20 | 9.70159 | 13 | 9.76493 | 18 | 0.23507 | 9.93665 | 4 | 80 |
| 21 | 9.70172 | 13 | 9.76511 | 17 | 0.23489 | 9.93661 | 5 | 79 |
| 22 | 9.70185 | 13 | 9.76528 | 18 | 0.23472 | 9.93656 | 4 | 78 |
| 23 | 9.70198 | 13 | 9.76546 | 17 | 0.23454 | 9.93652 | 4 | 77 |
| 24 | 9.70211 | 13 | 9.76563 | 17 | 0.23437 | 9.93648 | 5 | 76 |
| 25 | 9.70224 | 13 | 9.76580 | 18 | 0.23420 | 9.93643 | 4 | 75 |
| 26 | 9.70237 | 13 | 9.76598 | 17 | 0.23402 | 9.93639 | 5 | 74 |
| 27 | 9.70250 | 13 | 9.76615 | 18 | 0.23385 | 9.93634 | 4 | 73 |
| 28 | 9.70263 | 13 | 9.76633 | 17 | 0.23367 | 9.93630 | 5 | 72 |
| 29 | 9.70276 | 12 | 9.76650 | 18 | 0.23350 | 9.93625 | 4 | 71 |
| 30 | 9.70288 | 13 | 9.76668 | 17 | 0.23332 | 9.93621 | 4 | 70 |
| 31 | 9.70301 | 13 | 9.76685 | 17 | 0.23315 | 9.93617 | 5 | 69 |
| 32 | 9.70314 | 13 | 9.76702 | 18 | 0.23298 | 9.93612 | 4 | 68 |
| 33 | 9.70327 | 13 | 9.76720 | 17 | 0.23280 | 9.93608 | 5 | 67 |
| 34 | 9.70340 | 13 | 9.76737 | 17 | 0.23263 | 9.93603 | 4 | 66 |
| 35 | 9.70353 | 13 | 9.76754 | 18 | 0.23246 | 9.93599 | 5 | 65 |
| 36 | 9.70366 | 13 | 9.76772 | 17 | 0.23228 | 9.93594 | 4 | 64 |
| 37 | 9.70379 | 13 | 9.76789 | 18 | 0.23211 | 9.93590 | 5 | 63 |
| 38 | 9.70392 | 13 | 9.76807 | 17 | 0.23193 | 9.93585 | 4 | 62 |
| 39 | 9.70405 | 13 | 9.76824 | 17 | 0.23176 | 9.93581 | 4 | 61 |
| 40 | 9.70418 | 13 | 9.76841 | 18 | 0.23159 | 9.93577 | 5 | 60 |
| 41 | 9.70431 | 13 | 9.76859 | 17 | 0.23141 | 9.93572 | 4 | 59 |
| 42 | 9.70444 | 13 | 9.76876 | 17 | 0.23124 | 9.93568 | 5 | 58 |
| 43 | 9.70457 | 13 | 9.76893 | 18 | 0.23107 | 9.93563 | 4 | 57 |
| 44 | 9.70470 | 12 | 9.76911 | 17 | 0.23089 | 9.93559 | 5 | 56 |
| 45 | 9.70482 | 13 | 9.76928 | 17 | 0.23072 | 9.93554 | 4 | 55 |
| 46 | 9.70495 | 13 | 9.76945 | 18 | 0.23055 | 9.93550 | 5 | 54 |
| 47 | 9.70508 | 13 | 9.76963 | 17 | 0.23037 | 9.93545 | 4 | 53 |
| 48 | 9.70521 | 13 | 9.76980 | 18 | 0.23020 | 9.93541 | 4 | 52 |
| 49 | 9.70534 | 13 | 9.76998 | 17 | 0.23002 | 9.93537 | 5 | 51 |
| 50 | 9.70547 | | 9.77015 | | 0.22985 | 9.93532 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 18 | 17 | 14 | 18 | 4 |
|---|---|---|---|---|---|
| 1 | 1.8 | 1.7 | 1.4 | 1.3 | 0.4 |
| 2 | 3.6 | 3.4 | 2.8 | 2.6 | 0.8 |
| 3 | 5.4 | 5.1 | 4.2 | 3.9 | 1.2 |
| 4 | 7.2 | 6.8 | 5.6 | 5.2 | 1.6 |
| 5 | 9.0 | 8.5 | 7.0 | 6.5 | 2.0 |
| 6 | 10.8 | 10.2 | 8.4 | 7.8 | 2.4 |
| 7 | 12.6 | 11.9 | 9.8 | 9.1 | 2.8 |
| 8 | 14.4 | 13.6 | 11.2 | 10.4 | 3.2 |
| 9 | 16.2 | 15.3 | 12.6 | 11.7 | 3.6 |

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| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.70547 | 13 | 9.77015 | 17 | 0.22985 | 9.93532 | 4 | 50 |
| 51 | 9.70560 | 13 | 9.77032 | 18 | 0.22968 | 9.93528 | 5 | 49 |
| 52 | 9.70573 | 12 | 9.77050 | 17 | 0.22950 | 9.93523 | 4 | 48 |
| 53 | 9.70585 | 13 | 9.77067 | 17 | 0.22933 | 9.93519 | 5 | 47 |
| 54 | 9.70598 | 13 | 9.77084 | 17 | 0.22916 | 9.93514 | 4 | 46 |
| 55 | 9.70611 | 13 | 9.77101 | 18 | 0.22899 | 9.93510 | 5 | 45 |
| 56 | 9.70624 | 13 | 9.77119 | 17 | 0.22881 | 9.93505 | 4 | 44 |
| 57 | 9.70637 | 13 | 9.77136 | 17 | 0.22864 | 9.93501 | 5 | 43 |
| 58 | 9.70650 | 12 | 9.77153 | 18 | 0.22847 | 9.93496 | 4 | 42 |
| 59 | 9.70662 | 13 | 9.77171 | 17 | 0.22829 | 9.93492 | 5 | 41 |
| 60 | 9.70675 | 13 | 9.77188 | 17 | 0.22812 | 9.93487 | 4 | 40 |
| 61 | 9.70688 | 13 | 9.77205 | 18 | 0.22795 | 9.93483 | 5 | 39 |
| 62 | 9.70701 | 13 | 9.77223 | 17 | 0.22777 | 9.93478 | 4 | 38 |
| 63 | 9.70714 | 13 | 9.77240 | 17 | 0.22760 | 9.93474 | 5 | 37 |
| 64 | 9.70727 | 12 | 9.77257 | 17 | 0.22743 | 9.93469 | 4 | 36 |
| 65 | 9.70739 | 13 | 9.77274 | 18 | 0.22726 | 9.93465 | 5 | 35 |
| 66 | 9.70752 | 13 | 9.77292 | 17 | 0.22708 | 9.93460 | 4 | 34 |
| 67 | 9.70765 | 13 | 9.77309 | 17 | 0.22691 | 9.93456 | 5 | 33 |
| 68 | 9.70778 | 12 | 9.77326 | 18 | 0.22674 | 9.93451 | 4 | 32 |
| 69 | 9.70790 | 13 | 9.77344 | 17 | 0.22656 | 9.93447 | 5 | 31 |
| 70 | 9.70803 | 13 | 9.77361 | 17 | 0.22639 | 9.93442 | 4 | 30 |
| 71 | 9.70816 | 13 | 9.77378 | 17 | 0.22622 | 9.93438 | 5 | 29 |
| 72 | 9.70829 | 13 | 9.77395 | 18 | 0.22605 | 9.93433 | 4 | 28 |
| 73 | 9.70842 | 12 | 9.77413 | 17 | 0.22587 | 9.93429 | 5 | 27 |
| 74 | 9.70854 | 13 | 9.77430 | 17 | 0.22570 | 9.93424 | 4 | 26 |
| 75 | 9.70867 | 13 | 9.77447 | 17 | 0.22553 | 9.93420 | 5 | 25 |
| 76 | 9.70880 | 12 | 9.77464 | 18 | 0.22536 | 9.93415 | 4 | 24 |
| 77 | 9.70892 | 13 | 9.77482 | 17 | 0.22518 | 9.93411 | 5 | 23 |
| 78 | 9.70905 | 13 | 9.77499 | 17 | 0.22501 | 9.93406 | 4 | 22 |
| 79 | 9.70918 | 13 | 9.77516 | 17 | 0.22484 | 9.93402 | 5 | 21 |
| 80 | 9.70931 | 12 | 9.77533 | 18 | 0.22467 | 9.93397 | 4 | 20 |
| 81 | 9.70943 | 13 | 9.77551 | 17 | 0.22449 | 9.93393 | 5 | 19 |
| 82 | 9.70956 | 13 | 9.77568 | 17 | 0.22432 | 9.93388 | 4 | 18 |
| 83 | 9.70969 | 12 | 9.77585 | 17 | 0.22415 | 9.93384 | 5 | 17 |
| 84 | 9.70981 | 13 | 9.77602 | 17 | 0.22398 | 9.93379 | 4 | 16 |
| 85 | 9.70994 | 13 | 9.77619 | 18 | 0.22381 | 9.93375 | 5 | 15 |
| 86 | 9.71007 | 13 | 9.77637 | 17 | 0.22363 | 9.93370 | 4 | 14 |
| 87 | 9.71020 | 12 | 9.77654 | 17 | 0.22346 | 9.93366 | 5 | 13 |
| 88 | 9.71032 | 13 | 9.77671 | 17 | 0.22329 | 9.93361 | 4 | 12 |
| 89 | 9.71045 | 13 | 9.77688 | 18 | 0.22312 | 9.93357 | 5 | 11 |
| 90 | 9.71058 | 12 | 9.77706 | 17 | 0.22294 | 9.93352 | 5 | 10 |
| 91 | 9.71070 | 13 | 9.77723 | 17 | 0.22277 | 9.93347 | 4 | 09 |
| 92 | 9.71083 | 13 | 9.77740 | 17 | 0.22260 | 9.93343 | 5 | 08 |
| 93 | 9.71096 | 12 | 9.77757 | 17 | 0.22243 | 9.93338 | 4 | 07 |
| 94 | 9.71108 | 13 | 9.77774 | 17 | 0.22226 | 9.93334 | 5 | 06 |
| 95 | 9.71121 | 12 | 9.77791 | 18 | 0.22209 | 9.93329 | 4 | 05 |
| 96 | 9.71133 | 13 | 9.77809 | 17 | 0.22191 | 9.93325 | 5 | 04 |
| 97 | 9.71146 | 13 | 9.77826 | 17 | 0.22174 | 9.93320 | 4 | 03 |
| 98 | 9.71159 | 12 | 9.77843 | 17 | 0.22157 | 9.93316 | 5 | 02 |
| 99 | 9.71171 | 13 | 9.77860 | 17 | 0.22140 | 9.93311 | 4 | 01 |
| 100 | 9.71184 | | 9.77877 | | 0.22123 | 9.93307 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 18 | 17 | 18 | 12 | 5 |
|---|---|---|---|---|---|
| 1 | 1.8 | 1.7 | 1.3 | 1.2 | 0.5 |
| 2 | 3.6 | 3.4 | 2.6 | 2.4 | 1.0 |
| 3 | 5.4 | 5.1 | 3.9 | 3.6 | 1.5 |
| 4 | 7.2 | 6.8 | 5.2 | 4.8 | 2.0 |
| 5 | 9.0 | 8.5 | 6.5 | 6.0 | 2.5 |
| 6 | 10.8 | 10.2 | 7.8 | 7.2 | 3.0 |
| 7 | 12.6 | 11.9 | 9.1 | 8.4 | 3.5 |
| 8 | 14.4 | 13.6 | 10.4 | 9.6 | 4.0 |
| 9 | 16.2 | 15.3 | 11.7 | 10.8 | 4.5 |

# 31°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | | P. P. |
|---|---|---|---|---|---|---|---|---|---|
| 00 | 9.71184 | 13 | 9.77877 | 18 | 0.22123 | 9.93307 | 5 | 100 | |
| 01 | 9.71197 | 12 | 9.77895 | 17 | 0.22105 | 9.93302 | 5 | 99 | 18 |
| 02 | 9.71209 | 13 | 9.77912 | 17 | 0.22088 | 9.93297 | 4 | 98 | 1 1.8 |
| 03 | 9.71222 | 12 | 9.77929 | 17 | 0.22071 | 9.93293 | 5 | 97 | 2 3.6 |
| 04 | 9.71234 | 13 | 9.77946 | 17 | 0.22054 | 9.93288 | 4 | 96 | 3 5.4 |
| 05 | 9.71247 | 13 | 9.77963 | 17 | 0.22037 | 9.93284 | 5 | 95 | 4 7.2 |
| 06 | 9.71260 | 12 | 9.77980 | 17 | 0.22020 | 9.93279 | 4 | 94 | 5 9.0 |
| 07 | 9.71272 | 13 | 9.77997 | 18 | 0.22003 | 9.93275 | 5 | 93 | 6 10.8 |
| 08 | 9.71285 | 12 | 9.78015 | 17 | 0.21985 | 9.93270 | 5 | 92 | 7 12.6 |
| 09 | 9.71297 | 13 | 9.78032 | 17 | 0.21968 | 9.93265 | 4 | 91 | 8 14.4 |
| 10 | 9.71310 | 12 | 9.78049 | 17 | 0.21951 | 9.93261 | 5 | 90 | 9 16.2 |
| 11 | 9.71322 | 13 | 9.78066 | 17 | 0.21934 | 9.93256 | 4 | 89 | 17 |
| 12 | 9.71335 | 13 | 9.78083 | 17 | 0.21917 | 9.93252 | 5 | 88 | 1 1.7 |
| 13 | 9.71348 | 12 | 9.78100 | 17 | 0.21900 | 9.93247 | 4 | 87 | 2 3.4 |
| 14 | 9.71360 | 13 | 9.78117 | 18 | 0.21883 | 9.93243 | 5 | 86 | 3 5.1 |
| 15 | 9.71373 | 12 | 9.78135 | 17 | 0.21865 | 9.93238 | 5 | 85 | 4 6.8 |
| 16 | 9.71385 | 13 | 9.78152 | 17 | 0.21848 | 9.93233 | 4 | 84 | 5 8.5 |
| 17 | 9.71398 | 12 | 9.78169 | 17 | 0.21831 | 9.93229 | 5 | 83 | 6 10.2 |
| 18 | 9.71410 | 13 | 9.78186 | 17 | 0.21814 | 9.93224 | 4 | 82 | 7 11.9 |
| 19 | 9.71423 | 12 | 9.78203 | 17 | 0.21797 | 9.93220 | 5 | 81 | 8 13.6 |
| 20 | 9.71435 | 13 | 9.78220 | 17 | 0.21780 | 9.93215 | 4 | 80 | 9 15.3 * |
| 21 | 9.71448 | 12 | 9.78237 | 17 | 0.21763 | 9.93211 | 5 | 79 | 18 |
| 22 | 9.71460 | 13 | 9.78254 | 17 | 0.21746 | 9.93206 | 5 | 78 | 1 1.3 |
| 23 | 9.71473 | 12 | 9.78271 | 18 | 0.21729 | 9.93201 | 4 | 77 | 2 2.6 |
| 24 | 9.71485 | 13 | 9.78289 | 17 | 0.21711 | 9.93197 | 5 | 76 | 3 3.9 |
| 25 | 9.71498 | 12 | 9.78306 | 17 | 0.21694 | 9.93192 | 4 | 75 | 4 5.2 |
| 26 | 9.71510 | 13 | 9.78323 | 17 | 0.21677 | 9.93188 | 5 | 74 | 5 6.5 |
| 27 | 9.71523 | 12 | 9.78340 | 17 | 0.21660 | 9.93183 | 5 | 73 | 6 7.8 |
| 28 | 9.71535 | 13 | 9.78357 | 17 | 0.21643 | 9.93178 | 4 | 72 | 7 9.1 |
| 29 | 9.71548 | 12 | 9.78374 | 17 | 0.21626 | 9.93174 | 5 | 71 | 8 10.4 |
| 30 | 9.71560 | 13 | 9.78391 | 17 | 0.21609 | 9.93169 | 4 | 70 | 9 11.7 |
| 31 | 9.71573 | 12 | 9.78408 | 17 | 0.21592 | 9.93165 | 5 | 69 | 12 |
| 32 | 9.71585 | 13 | 9.78425 | 17 | 0.21575 | 9.93160 | 5 | 68 | 1 1.2 |
| 33 | 9.71598 | 12 | 9.78442 | 17 | 0.21558 | 9.93155 | 4 | 67 | 2 2.4 |
| 34 | 9.71610 | 12 | 9.78459 | 17 | 0.21541 | 9.93151 | 5 | 66 | 3 3.6 |
| 35 | 9.71622 | 13 | 9.78476 | 17 | 0.21524 | 9.93146 | 5 | 65 | 4 4.8 |
| 36 | 9.71635 | 12 | 9.78493 | 17 | 0.21507 | 9.93141 | 4 | 64 | 5 6.0 |
| 37 | 9.71647 | 13 | 9.78510 | 18 | 0.21490 | 9.93137 | 5 | 63 | 6 7.2 |
| 38 | 9.71660 | 12 | 9.78528 | 17 | 0.21472 | 9.93132 | 4 | 62 | 7 8.4 |
| 39 | 9.71672 | 13 | 9.78545 | 17 | 0.21455 | 9.93128 | 5 | 61 | 8 9.6 |
| 40 | 9.71685 | 12 | 9.78562 | 17 | 0.21438 | 9.93123 | 5 | 60 | 9 10.8 * |
| 41 | 9.71697 | 12 | 9.78579 | 17 | 0.21421 | 9.93118 | 4 | 59 | 4 |
| 42 | 9.71709 | 13 | 9.78596 | 17 | 0.21404 | 9.93114 | 5 | 58 | 1 0.4 |
| 43 | 9.71722 | 12 | 9.78613 | 17 | 0.21387 | 9.93109 | 5 | 57 | 2 0.8 |
| 44 | 9.71734 | 13 | 9.78630 | 17 | 0.21370 | 9.93104 | 4 | 56 | 3 1.2 |
| 45 | 9.71747 | 12 | 9.78647 | 17 | 0.21353 | 9.93100 | 5 | 55 | 4 1.6 |
| 46 | 9.71759 | 12 | 9.78664 | 17 | 0.21336 | 9.93095 | 4 | 54 | 5 2.0 |
| 47 | 9.71771 | 13 | 9.78681 | 17 | 0.21319 | 9.93091 | 5 | 53 | 6 2.4 |
| 48 | 9.71784 | 12 | 9.78698 | 17 | 0.21302 | 9.93086 | 5 | 52 | 7 2.8 |
| 49 | 9.71796 | 13 | 9.78715 | 17 | 0.21285 | 9.93081 | 4 | 51 | 8 3.2 |
| 50 | 9.71809 | | 9.78732 | | 0.21268 | 9.93077 | | 50 | 9 3.6 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | | P. P. |

# 58°

| | Sin. | d. | Tang | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.71809 | 12 | 9.78732 | 17 | 0.21268 | 9.93077 | 5 | 50 |
| 51 | 9.71821 | 12 | 9.78749 | 17 | 0.21251 | 9.93072 | 5 | 49 |
| 52 | 9.71833 | 13 | 9.78766 | 17 | 0.21234 | 9.93067 | 4 | 48 |
| 53 | 9.71846 | 12 | 9.78783 | 17 | 0.21217 | 9.93063 | 5 | 47 |
| 54 | 9.71858 | 12 | 9.78800 | 17 | 0.21200 | 9.93058 | 5 | 46 |
| 55 | 9.71870 | 13 | 9.78817 | 17 | 0.21183 | 9.93053 | 4 | 45 |
| 56 | 9.71883 | 12 | 9.78834 | 17 | 0.21166 | 9.93049 | 5 | 44 |
| 57 | 9.71895 | 12 | 9.78851 | 17 | 0.21149 | 9.93044 | 5 | 43 |
| 58 | 9.71907 | 13 | 9.78868 | 17 | 0.21132 | 9.93039 | 4 | 42 |
| 59 | 9.71920 | 12 | 9.78885 | 17 | 0.21115 | 9.93035 | 5 | 41 |
| 60 | 9.71932 | 12 | 9.78902 | 17 | 0.21098 | 9.93030 | 5 | 40 |
| 61 | 9.71944 | 13 | 9.78919 | 17 | 0.21081 | 9.93025 | 4 | 39 |
| 62 | 9.71957 | 12 | 9.78936 | 17 | 0.21064 | 9.93021 | 5 | 38 |
| 63 | 9.71969 | 12 | 9.78953 | 17 | 0.21047 | 9.93016 | 5 | 37 |
| 64 | 9.71981 | 13 | 9.78970 | 17 | 0.21030 | 9.93011 | 4 | 36 |
| 65 | 9.71994 | 12 | 9.78987 | 17 | 0.21013 | 9.93007 | 5 | 35 |
| 66 | 9.72006 | 12 | 9.79004 | 17 | 0.20996 | 9.93002 | 5 | 34 |
| 67 | 9.72018 | 12 | 9.79021 | 17 | 0.20979 | 9.92997 | 4 | 33 |
| 68 | 9.72030 | 13 | 9.79038 | 17 | 0.20962 | 9.92993 | 5 | 32 |
| 69 | 9.72043 | 12 | 9.79055 | 17 | 0.20945 | 9.92988 | 5 | 31 |
| 70 | 9.72055 | 12 | 9.79072 | 17 | 0.20928 | 9.92983 | 4 | 30 |
| 71 | 9.72067 | 12 | 9.79089 | 17 | 0.20911 | 9.92979 | 5 | 29 |
| 72 | 9.72079 | 13 | 9.79106 | 16 | 0.20894 | 9.92974 | 5 | 28 |
| 73 | 9.72092 | 12 | 9.79122 | 17 | 0.20878 | 9.92969 | 4 | 27 |
| 74 | 9.72104 | 12 | 9.79139 | 17 | 0.20861 | 9.92965 | 5 | 26 |
| 75 | 9.72116 | 12 | 9.79156 | 17 | 0.20844 | 9.92960 | 5 | 25 |
| 76 | 9.72128 | 13 | 9.79173 | 17 | 0.20827 | 9.92955 | 4 | 24 |
| 77 | 9.72141 | 12 | 9.79190 | 17 | 0.20810 | 9.92951 | 5 | 23 |
| 78 | 9.72153 | 12 | 9.79207 | 17 | 0.20793 | 9.92946 | 5 | 22 |
| 79 | 9.72165 | 12 | 9.79224 | 17 | 0.20776 | 9.92941 | 5 | 21 |
| 80 | 9.72177 | 13 | 9.79241 | 17 | 0.20759 | 9.92936 | 4 | 20 |
| 81 | 9.72190 | 12 | 9.79258 | 17 | 0.20742 | 9.92932 | 5 | 19 |
| 82 | 9.72202 | 12 | 9.79275 | 17 | 0.20725 | 9.92927 | 5 | 18 |
| 83 | 9.72214 | 12 | 9.79292 | 17 | 0.20708 | 9.92922 | 4 | 17 |
| 84 | 9.72226 | 12 | 9.79309 | 17 | 0.20691 | 9.92918 | 5 | 16 |
| 85 | 9.72238 | 13 | 9.79326 | 17 | 0.20674 | 9.92913 | 5 | 15 |
| 86 | 9.72251 | 12 | 9.79343 | 16 | 0.20657 | 9.92908 | 5 | 14 |
| 87 | 9.72263 | 12 | 9.79359 | 17 | 0.20641 | 9.92903 | 4 | 13 |
| 88 | 9.72275 | 12 | 9.79376 | 17 | 0.20624 | 9.92899 | 5 | 12 |
| 89 | 9.72287 | 12 | 9.79393 | 17 | 0.20607 | 9.92894 | 5 | 11 |
| 90 | 9.72299 | 13 | 9.79410 | 17 | 0.20590 | 9.92889 | 4 | 10 |
| 91 | 9.72312 | 12 | 9.79427 | 17 | 0.20573 | 9.92885 | 5 | 09 |
| 92 | 9.72324 | 12 | 9.79444 | 17 | 0.20556 | 9.92880 | 5 | 08 |
| 93 | 9.72336 | 12 | 9.79461 | 17 | 0.20539 | 9.92875 | 5 | 07 |
| 94 | 9.72348 | 12 | 9.79478 | 17 | 0.20522 | 9.92870 | 4 | 06 |
| 95 | 9.72360 | 12 | 9.79495 | 16 | 0.20505 | 9.92866 | 5 | 05 |
| 96 | 9.72372 | 13 | 9.79511 | 17 | 0.20489 | 9.92861 | 5 | 04 |
| 97 | 9.72385 | 12 | 9.79528 | 17 | 0.20472 | 9.92856 | 4 | 03 |
| 98 | 9.72397 | 12 | 9.79545 | 17 | 0.20455 | 9.92852 | 5 | 02 |
| 99 | 9.72409 | 12 | 9.79562 | 17 | 0.20438 | 9.92847 | 5 | 01 |
| 100 | 9.72421 | | 9.79579 | | 0.20421 | 9.92842 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 17 | 16 | 13 | 12 | 5 |
|---|---|---|---|---|---|
| 1 | 1.7 | 1.6 | 1.3 | 1.2 | 0.5 |
| 2 | 3.4 | 3.2 | 2.6 | 2.4 | 1.0 |
| 3 | 5.1 | 4.8 | 3.9 | 3.6 | 1.5 |
| 4 | 6.8 | 6.4 | 5.2 | 4.8 | 2.0 |
| 5 | 8.5 | 8.0 | 6.5 | 6.0 | 2.5 |
| 6 | 10.2 | 9.6 | 7.8 | 7.2 | 3.0 |
| 7 | 11.9 | 11.2 | 9.1 | 8.4 | 3.5 |
| 8 | 13.6 | 12.8 | 10.4 | 9.6 | 4.0 |
| 9 | 15.3 | 14.4 | 11.7 | 10.8 | 4.5 |

# 32°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.72421 | 12 | 9.79579 | 17 | 0.20421 | 9.92842 | 5 | 100 |
| 01 | 9.72433 | 12 | 9.79596 | 17 | 0.20404 | 9.92837 | 4 | 99 |
| 02 | 9.72445 | 12 | 9.79613 | 17 | 0.20387 | 9.92833 | 5 | 98 |
| 03 | 9.72457 | 12 | 9.79630 | 16 | 0.20370 | 9.92828 | 5 | 97 |
| 04 | 9.72469 | 13 | 9.79646 | 17 | 0.20354 | 9.92823 | 5 | 96 |
| 05 | 9.72482 | 12 | 9.79663 | 17 | 0.20337 | 9.92818 | 4 | 95 |
| 06 | 9.72494 | 12 | 9.79680 | 17 | 0.20320 | 9.92814 | 5 | 94 |
| 07 | 9.72506 | 12 | 9.79697 | 17 | 0.20303 | 9.92809 | 5 | 93 |
| 08 | 9.72518 | 12 | 9.79714 | 17 | 0.20286 | 9.92804 | 5 | 92 |
| 09 | 9.72530 | 12 | 9.79731 | 16 | 0.20269 | 9.92799 | 4 | 91 |
| 10 | 9.72542 | 12 | 9.79747 | 17 | 0.20253 | 9.92795 | 5 | 90 |
| 11 | 9.72554 | 12 | 9.79764 | 17 | 0.20236 | 9.92790 | 5 | 89 |
| 12 | 9.72566 | 12 | 9.79781 | 17 | 0.20219 | 9.92785 | 5 | 88 |
| 13 | 9.72578 | 12 | 9.79798 | 17 | 0.20202 | 9.92780 | 4 | 87 |
| 14 | 9.72590 | 12 | 9.79815 | 17 | 0.20185 | 9.92776 | 5 | 86 |
| 15 | 9.72602 | 12 | 9.79832 | 16 | 0.20168 | 9.92771 | 5 | 85 |
| 16 | 9.72614 | 13 | 9.79848 | 17 | 0.20152 | 9.92766 | 5 | 84 |
| 17 | 9.72627 | 12 | 9.79865 | 17 | 0.20135 | 9.92761 | 5 | 83 |
| 18 | 9.72639 | 12 | 9.79882 | 17 | 0.20118 | 9.92756 | 4 | 82 |
| 19 | 9.72651 | 12 | 9.79899 | 17 | 0.20101 | 9.92752 | 5 | 81 |
| 20 | 9.72663 | 12 | 9.79916 | 16 | 0.20084 | 9.92747 | 5 | 80 |
| 21 | 9.72675 | 12 | 9.79932 | 17 | 0.20068 | 9.92742 | 5 | 79 |
| 22 | 9.72687 | 12 | 9.79949 | 17 | 0.20051 | 9.92737 | 4 | 78 |
| 23 | 9.72699 | 12 | 9.79966 | 17 | 0.20034 | 9.92733 | 5 | 77 |
| 24 | 9.72711 | 12 | 9.79983 | 17 | 0.20017 | 9.92728 | 5 | 76 |
| 25 | 9.72723 | 12 | 9.80000 | 16 | 0.20000 | 9.92723 | 5 | 75 |
| 26 | 9.72735 | 12 | 9.80016 | 17 | 0.19984 | 9.92718 | 5 | 74 |
| 27 | 9.72747 | 12 | 9.80033 | 17 | 0.19967 | 9.92713 | 4 | 73 |
| 28 | 9.72759 | 12 | 9.80050 | 17 | 0.19950 | 9.92709 | 5 | 72 |
| 29 | 9.72771 | 12 | 9.80067 | 17 | 0.19933 | 9.92704 | 5 | 71 |
| 30 | 9.72783 | 12 | 9.80084 | 16 | 0.19916 | 9.92699 | 5 | 70 |
| 31 | 9.72795 | 12 | 9.80100 | 17 | 0.19900 | 9.92694 | 4 | 69 |
| 32 | 9.72807 | 12 | 9.80117 | 17 | 0.19883 | 9.92690 | 5 | 68 |
| 33 | 9.72819 | 12 | 9.80134 | 17 | 0.19866 | 9.92685 | 5 | 67 |
| 34 | 9.72831 | 12 | 9.80151 | 17 | 0.19849 | 9.92680 | 5 | 66 |
| 35 | 9.72843 | 12 | 9.80168 | 16 | 0.19832 | 9.92675 | 5 | 65 |
| 36 | 9.72855 | 12 | 9.80184 | 17 | 0.19816 | 9.92670 | 4 | 64 |
| 37 | 9.72867 | 12 | 9.80201 | 17 | 0.19799 | 9.92666 | 5 | 63 |
| 38 | 9.72879 | 11 | 9.80218 | 17 | 0.19782 | 9.92661 | 5 | 62 |
| 39 | 9.72890 | 12 | 9.80235 | 16 | 0.19765 | 9.92656 | 5 | 61 |
| 40 | 9.72902 | 12 | 9.80251 | 17 | 0.19749 | 9.92651 | 5 | 60 |
| 41 | 9.72914 | 12 | 9.80268 | 17 | 0.19732 | 9.92646 | 5 | 59 |
| 42 | 9.72926 | 12 | 9.80285 | 17 | 0.19715 | 9.92641 | 4 | 58 |
| 43 | 9.72938 | 12 | 9.80302 | 16 | 0.19698 | 9.92637 | 5 | 57 |
| 44 | 9.72950 | 12 | 9.80318 | 17 | 0.19682 | 9.92632 | 5 | 56 |
| 45 | 9.72962 | 12 | 9.80335 | 17 | 0.19665 | 9.92627 | 5 | 55 |
| 46 | 9.72974 | 12 | 9.80352 | 17 | 0.19648 | 9.92622 | 5 | 54 |
| 47 | 9.72986 | 12 | 9.80369 | 16 | 0.19631 | 9.92617 | 4 | 53 |
| 48 | 9.72998 | 12 | 9.80385 | 17 | 0.19615 | 9.92613 | 5 | 52 |
| 49 | 9.73010 | 12 | 9.80402 | 17 | 0.19598 | 9.92608 | 5 | 51 |
| 50 | 9.73022 | | 9.80419 | | 0.19581 | 9.92603 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 17 | 16 | 13 | 12 | 4 |
|---|---|---|---|---|---|
| 1 | 1.7 | 1.6 | 1.3 | 1.2 | 0.4 |
| 2 | 3.4 | 3.2 | 2.6 | 2.4 | 0.8 |
| 3 | 5.1 | 4.8 | 3.9 | 3.6 | 1.2 |
| 4 | 6.8 | 6.4 | 5.2 | 4.8 | 1.6 |
| 5 | 8.5 | 8.0 | 6.5 | 6.0 | 2.0 |
| 6 | 10.2 | 9.6 | 7.8 | 7.2 | 2.4 |
| 7 | 11.9 | 11.2 | 9.1 | 8.4 | 2.8 |
| 8 | 13.6 | 12.8 | 10.4 | 9.6 | 3.2 |
| 9 | 15.3 | 14.4 | 11.7 | 10.8 | 3.6 |

| | Sin. | d. | Tang. | d. c | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.73022 | 12 | 9.80419 | 16 | 0.19581 | 9.92603 | 5 | 50 |
| 51 | 9.73034 | 11 | 9.80435 | 17 | 0.19565 | 9.92598 | 5 | 49 |
| 52 | 9.73045 | 12 | 9.80452 | 17 | 0.19548 | 9.92593 | 5 | 48 |
| 53 | 9.73057 | 12 | 9.80469 | 17 | 0.19531 | 9.92588 | 4 | 47 |
| 54 | 9.73069 | 12 | 9.80486 | 16 | 0.19514 | 9.92584 | 5 | 46 |
| 55 | 9.73081 | 12 | 9.80502 | 17 | 0.19498 | 9.92579 | 5 | 45 |
| 56 | 9.73093 | 12 | 9.80519 | 17 | 0.19481 | 9.92574 | 5 | 44 |
| 57 | 9.73105 | 12 | 9.80536 | 16 | 0.19464 | 9.92569 | 5 | 43 |
| 58 | 9.73117 | 12 | 9.80552 | 17 | 0.19448 | 9.92564 | 5 | 42 |
| 59 | 9.73129 | 11 | 9.80569 | 17 | 0.19431 | 9.92559 | 4 | 41 |
| 60 | 9.73140 | 12 | 9.80586 | 17 | 0.19414 | 9.92555 | 5 | 40 |
| 61 | 9.73152 | 12 | 9.80603 | 16 | 0.19397 | 9.92550 | 5 | 39 |
| 62 | 9.73164 | 12 | 9.80619 | 17 | 0.19381 | 9.92545 | 5 | 38 |
| 63 | 9.73176 | 12 | 9.80636 | 17 | 0.19364 | 9.92540 | 5 | 37 |
| 64 | 9.73188 | 12 | 9.80653 | 16 | 0.19347 | 9.92535 | 5 | 36 |
| 65 | 9.73200 | 11 | 9.80669 | 17 | 0.19331 | 9.92530 | 5 | 35 |
| 66 | 9.73211 | 12 | 9.80686 | 17 | 0.19314 | 9.92525 | 4 | 34 |
| 67 | 9.73223 | 12 | 9.80703 | 16 | 0.19297 | 9.92521 | 5 | 33 |
| 68 | 9.73235 | 12 | 9.80719 | 17 | 0.19281 | 9.92516 | 5 | 32 |
| 69 | 9.73247 | 12 | 9.80736 | 17 | 0.19264 | 9.92511 | 5 | 31 |
| 70 | 9.73259 | 12 | 9.80753 | 16 | 0.19247 | 9.92506 | 5 | 30 |
| 71 | 9.73271 | 11 | 9.80769 | 17 | 0.19231 | 9.92501 | 5 | 29 |
| 72 | 9.73282 | 12 | 9.80786 | 17 | 0.19214 | 9.92496 | 5 | 28 |
| 73 | 9.73294 | 12 | 9.80803 | 16 | 0.19197 | 9.92491 | 5 | 27 |
| 74 | 9.73306 | 12 | 9.80819 | 17 | 0.19181 | 9.92486 | 4 | 26 |
| 75 | 9.73318 | 11 | 9.80836 | 17 | 0.19164 | 9.92482 | 5 | 25 |
| 76 | 9.73329 | 12 | 9.80853 | 16 | 0.19147 | 9.92477 | 5 | 24 |
| 77 | 9.73341 | 12 | 9.80869 | 17 | 0.19131 | 9.92472 | 5 | 23 |
| 78 | 9.73353 | 12 | 9.80886 | 17 | 0.19114 | 9.92467 | 5 | 22 |
| 79 | 9.73365 | 12 | 9.80903 | 16 | 0.19097 | 9.92462 | 5 | 21 |
| 80 | 9.73377 | 11 | 9.80919 | 17 | 0.19081 | 9.92457 | 5 | 20 |
| 81 | 9.73388 | 12 | 9.80936 | 17 | 0.19064 | 9.92452 | 5 | 19 |
| 82 | 9.73400 | 12 | 9.80953 | 16 | 0.19047 | 9.92447 | 4 | 18 |
| 83 | 9.73412 | 12 | 9.80969 | 17 | 0.19031 | 9.92443 | 5 | 17 |
| 84 | 9.73424 | 11 | 9.80986 | 17 | 0.19014 | 9.92438 | 5 | 16 |
| 85 | 9.73435 | 12 | 9.81003 | 16 | 0.18997 | 9.92433 | 5 | 15 |
| 86 | 9.73447 | 12 | 9.81019 | 17 | 0.18981 | 9.92428 | 5 | 14 |
| 87 | 9.73459 | 11 | 9.81036 | 16 | 0.18964 | 9.92423 | 5 | 13 |
| 88 | 9.73470 | 12 | 9.81052 | 17 | 0.18948 | 9.92418 | 5 | 12 |
| 89 | 9.73482 | 12 | 9.81069 | 17 | 0.18931 | 9.92413 | 5 | 11 |
| 90 | 9.73494 | 12 | 9.81086 | 16 | 0.18914 | 9.92408 | 5 | 10 |
| 91 | 9.73506 | 11 | 9.81102 | 17 | 0.18898 | 9.92403 | 5 | 09 |
| 92 | 9.73517 | 12 | 9.81119 | 17 | 0.18881 | 9.92398 | 4 | 08 |
| 93 | 9.73529 | 12 | 9.81136 | 16 | 0.18864 | 9.92394 | 5 | 07 |
| 94 | 9.73541 | 11 | 9.81152 | 17 | 0.18848 | 9.92389 | 5 | 06 |
| 95 | 9.73552 | 12 | 9.81169 | 16 | 0.18831 | 9.92384 | 5 | 05 |
| 96 | 9.73564 | 12 | 9.81185 | 17 | 0.18815 | 9.92379 | 5 | 04 |
| 97 | 9.73576 | 12 | 9.81202 | 17 | 0.18798 | 9.92374 | 5 | 03 |
| 98 | 9.73588 | 11 | 9.81219 | 16 | 0.18781 | 9.92369 | 5 | 02 |
| 99 | 9.73599 | 12 | 9.81235 | 17 | 0.18765 | 9.92364 | 5 | 01 |
| 100 | 9.73611 | | 9.81252 | | 0.18748 | 9.92359 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang | Sin. | d. | |

P. P.

| 17 | |
|---|---|
| 1 | 1.7 |
| 2 | 3.4 |
| 3 | 5.1 |
| 4 | 6.8 |
| 5 | 8.5 |
| 6 | 10.2 |
| 7 | 11.9 |
| 8 | 13.6 |
| 9 | 15.3 |

| 16 | |
|---|---|
| 1 | 1.6 |
| 2 | 3.2 |
| 3 | 4.8 |
| 4 | 6.4 |
| 5 | 8.0 |
| 6 | 9.6 |
| 7 | 11.2 |
| 8 | 12.8 |
| 9 | 14.4 |

*

| 12 | |
|---|---|
| 1 | 1.2 |
| 2 | 2.4 |
| 3 | 3.6 |
| 4 | 4.8 |
| 5 | 6.0 |
| 6 | 7.2 |
| 7 | 8.4 |
| 8 | 9.6 |
| 9 | 10.8 |

| 11 | |
|---|---|
| 1 | 1.1 |
| 2 | 2.2 |
| 3 | 3.3 |
| 4 | 4.4 |
| 5 | 5.5 |
| 6 | 6.6 |
| 7 | 7.7 |
| 8 | 8.8 |
| 9 | 9.9 |

*

| 5 | |
|---|---|
| 1 | 0.5 |
| 2 | 1.0 |
| 3 | 1.5 |
| 4 | 2.0 |
| 5 | 2.5 |
| 6 | 3.0 |
| 7 | 3.5 |
| 8 | 4.0 |
| 9 | 4.5 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | | P. P. |
|---|---|---|---|---|---|---|---|---|---|
| 00 | 9.73611 | 12 | 9.81252 | 16 | 0.18748 | 9.92359 | 5 | 100 | |
| 01 | 9.73623 | 11 | 9.81268 | 17 | 0.18732 | 9.92354 | 5 | 99 | |
| 02 | 9.73634 | 12 | 9.81285 | 17 | 0.18715 | 9.92349 | 5 | 98 | |
| 03 | 9.73646 | 12 | 9.81302 | 16 | 0.18698 | 9.92344 | 5 | 97 | |
| 04 | 9.73658 | 11 | 9.81318 | 17 | 0.18682 | 9.92339 | 4 | 96 | |
| 05 | 9.73669 | 12 | 9.81335 | 16 | 0.18665 | 9.92335 | 5 | 95 | |
| 06 | 9.73681 | 11 | 9.81351 | 17 | 0.18649 | 9.92330 | 5 | 94 | |
| 07 | 9.73692 | 12 | 9.81368 | 16 | 0.18632 | 9.92325 | 5 | 93 | |
| 08 | 9.73704 | 12 | 9.81384 | 17 | 0.18616 | 9.92320 | 5 | 92 | |
| 09 | 9.73716 | 11 | 9.81401 | 17 | 0.18599 | 9.92315 | 5 | 91 | |
| 10 | 9.73727 | 12 | 9.81418 | 16 | 0.18582 | 9.92310 | 5 | 90 | |
| 11 | 9.73739 | 12 | 9.81434 | 17 | 0.18566 | 9.92305 | 5 | 89 | |
| 12 | 9.73751 | 11 | 9.81451 | 16 | 0.18549 | 9.92300 | 5 | 88 | |
| 13 | 9.73762 | 12 | 9.81467 | 17 | 0.18533 | 9.92295 | 5 | 87 | |
| 14 | 9.73774 | 11 | 9.81484 | 16 | 0.18516 | 9.92290 | 5 | 86 | |
| 15 | 9.73785 | 12 | 9.81500 | 17 | 0.18500 | 9.92285 | 5 | 85 | |
| 16 | 9.73797 | 12 | 9.81517 | 16 | 0.18483 | 9.92280 | 5 | 84 | |
| 17 | 9.73809 | 11 | 9.81533 | 17 | 0.18467 | 9.92275 | 5 | 83 | |
| 18 | 9.73820 | 12 | 9.81550 | 17 | 0.18450 | 9.92270 | 5 | 82 | |
| 19 | 9.73832 | 11 | 9.81567 | 16 | 0.18433 | 9.92265 | 5 | 81 | |
| 20 | 9.73843 | 12 | 9.81583 | 17 | 0.18417 | 9.92260 | 5 | 80 | |
| 21 | 9.73855 | 12 | 9.81600 | 16 | 0.18400 | 9.92255 | 5 | 79 | |
| 22 | 9.73867 | 11 | 9.81616 | 17 | 0.18384 | 9.92250 | 5 | 78 | |
| 23 | 9.73878 | 12 | 9.81633 | 16 | 0.18367 | 9.92245 | 5 | 77 | |
| 24 | 9.73890 | 11 | 9.81649 | 17 | 0.18351 | 9.92240 | 5 | 76 | |
| 25 | 9.73901 | 12 | 9.81666 | 16 | 0.18334 | 9.92235 | 4 | 75 | |
| 26 | 9.73913 | 11 | 9.81682 | 17 | 0.18318 | 9.92231 | 5 | 74 | |
| 27 | 9.73924 | 12 | 9.81699 | 16 | 0.18301 | 9.92226 | 5 | 73 | |
| 28 | 9.73936 | 11 | 9.81715 | 17 | 0.18285 | 9.92221 | 5 | 72 | |
| 29 | 9.73947 | 12 | 9.81732 | 16 | 0.18268 | 9.92216 | 5 | 71 | |
| 30 | 9.73959 | 12 | 9.81748 | 17 | 0.18252 | 9.92211 | 5 | 70 | |
| 31 | 9.73971 | 11 | 9.81765 | 16 | 0.18235 | 9.92206 | 5 | 69 | |
| 32 | 9.73982 | 12 | 9.81781 | 17 | 0.18219 | 9.92201 | 5 | 68 | |
| 33 | 9.73994 | 11 | 9.81798 | 16 | 0.18202 | 9.92196 | 5 | 67 | |
| 34 | 9.74005 | 12 | 9.81814 | 17 | 0.18186 | 9.92191 | 5 | 66 | |
| 35 | 9.74017 | 11 | 9.81831 | 16 | 0.18169 | 9.92186 | 5 | 65 | |
| 36 | 9.74028 | 12 | 9.81847 | 17 | 0.18153 | 9.92181 | 5 | 64 | |
| 37 | 9.74040 | 11 | 9.81864 | 16 | 0.18136 | 9.92176 | 5 | 63 | |
| 38 | 9.74051 | 12 | 9.81880 | 17 | 0.18120 | 9.92171 | 5 | 62 | |
| 39 | 9.74063 | 11 | 9.81897 | 16 | 0.18103 | 9.92166 | 5 | 61 | |
| 40 | 9.74074 | 12 | 9.81913 | 17 | 0.18087 | 9.92161 | 5 | 60 | |
| 41 | 9.74086 | 11 | 9.81930 | 16 | 0.18070 | 9.92156 | 5 | 59 | |
| 42 | 9.74097 | 12 | 9.81946 | 17 | 0.18054 | 9.92151 | 5 | 58 | |
| 43 | 9.74109 | 11 | 9.81963 | 16 | 0.18037 | 9.92146 | 5 | 57 | |
| 44 | 9.74120 | 12 | 9.81979 | 17 | 0.18021 | 9.92141 | 5 | 56 | |
| 45 | 9.74132 | 11 | 9.81996 | 16 | 0.18004 | 9.92136 | 5 | 55 | |
| 46 | 9.74143 | 12 | 9.82012 | 17 | 0.17988 | 9.92131 | 5 | 54 | |
| 47 | 9.74155 | 11 | 9.82029 | 16 | 0.17971 | 9.92126 | 5 | 53 | |
| 48 | 9.74166 | 11 | 9.82045 | 17 | 0.17955 | 9.92121 | 5 | 52 | |
| 49 | 9.74177 | 12 | 9.82062 | 16 | 0.17938 | 9.92116 | 5 | 51 | |
| 50 | 9.74189 | | 9.82078 | | 0.17922 | 9.92111 | | 50 | |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | | P. P. |

P. P.

| | 17 | 16 | 12 | 11 | 5 |
|---|---|---|---|---|---|
| 1 | 1.7 | 1.6 | 1.2 | 1.1 | 0.5 |
| 2 | 3.4 | 3.2 | 2.4 | 2.2 | 1.0 |
| 3 | 5.1 | 4.8 | 3.6 | 3.3 | 1.5 |
| 4 | 6.8 | 6.4 | 4.8 | 4.4 | 2.0 |
| 5 | 8.5 | 8.0 | 6.0 | 5.5 | 2.5 |
| 6 | 10.2 | 9.6 | 7.2 | 6.6 | 3.0 |
| 7 | 11.9 | 11.2 | 8.4 | 7.7 | 3.5 |
| 8 | 13.6 | 12.8 | 9.6 | 8.8 | 4.0 |
| 9 | 15.3 | 14.4 | 10.8 | 9.9 | 4.5 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.74189 | 11 | 9.82078 | 17 | 0.17922 | 9.92111 | 5 | 50 |
| 51 | 9.74200 | 12 | 9.82095 | 16 | 0.17905 | 9.92106 | 5 | 49 |
| 52 | 9.74212 | 11 | 9.82111 | 17 | 0.17889 | 9.92101 | 5 | 48 |
| 53 | 9.74223 | 12 | 9.82128 | 16 | 0.17872 | 9.92096 | 5 | 47 |
| 54 | 9.74235 | 11 | 9.82144 | 17 | 0.17856 | 9.92091 | 5 | 46 |
| 55 | 9.74246 | 12 | 9.82161 | 16 | 0.17839 | 9.92086 | 5 | 45 |
| 56 | 9.74258 | 11 | 9.82177 | 17 | 0.17823 | 9.92081 | 6 | 44 |
| 57 | 9.74269 | 11 | 9.82194 | 16 | 0.17806 | 9.92075 | 5 | 43 |
| 58 | 9.74280 | 12 | 9.82210 | 16 | 0.17790 | 9.92070 | 5 | 42 |
| 59 | 9.74292 | 11 | 9.82226 | 17 | 0.17774 | 9.92065 | 5 | 41 |
| 60 | 9.74303 | 12 | 9.82243 | 16 | 0.17757 | 9.92060 | 5 | 40 |
| 61 | 9.74315 | 11 | 9.82259 | 17 | 0.17741 | 9.92055 | 5 | 39 |
| 62 | 9.74326 | 11 | 9.82276 | 16 | 0.17724 | 9.92050 | 5 | 38 |
| 63 | 9.74337 | 12 | 9.82292 | 17 | 0.17708 | 9.92045 | 5 | 37 |
| 64 | 9.74349 | 11 | 9.82309 | 16 | 0.17691 | 9.92040 | 5 | 36 |
| 65 | 9.74360 | 12 | 9.82325 | 16 | 0.17675 | 9.92035 | 5 | 35 |
| 66 | 9.74372 | 11 | 9.82341 | 17 | 0.17659 | 9.92030 | 5 | 34 |
| 67 | 9.74383 | 11 | 9.82358 | 16 | 0.17642 | 9.92025 | 5 | 33 |
| 68 | 9.74394 | 12 | 9.82374 | 17 | 0.17626 | 9.92020 | 5 | 32 |
| 69 | 9.74406 | 11 | 9.82391 | 16 | 0.17609 | 9.92015 | 5 | 31 |
| 70 | 9.74417 | 11 | 9.82407 | 17 | 0.17593 | 9.92010 | 5 | 30 |
| 71 | 9.74428 | 12 | 9.82424 | 16 | 0.17576 | 9.92005 | 5 | 29 |
| 72 | 9.74440 | 11 | 9.82440 | 16 | 0.17560 | 9.92000 | 5 | 28 |
| 73 | 9.74451 | 12 | 9.82456 | 17 | 0.17544 | 9.91995 | 5 | 27 |
| 74 | 9.74463 | 11 | 9.82473 | 16 | 0.17527 | 9.91990 | 5 | 26 |
| 75 | 9.74474 | 11 | 9.82489 | 17 | 0.17511 | 9.91985 | 5 | 25 |
| 76 | 9.74485 | 12 | 9.82506 | 16 | 0.17494 | 9.91980 | 5 | 24 |
| 77 | 9.74497 | 11 | 9.82522 | 16 | 0.17478 | 9.91975 | 6 | 23 |
| 78 | 9.74508 | 11 | 9.82538 | 17 | 0.17462 | 9.91969 | 5 | 22 |
| 79 | 9.74519 | 12 | 9.82555 | 16 | 0.17445 | 9.91964 | 5 | 21 |
| 80 | 9.74531 | 11 | 9.82571 | 17 | 0.17429 | 9.91959 | 5 | 20 |
| 81 | 9.74542 | 11 | 9.82588 | 16 | 0.17412 | 9.91954 | 5 | 19 |
| 82 | 9.74553 | 12 | 9.82604 | 16 | 0.17396 | 9.91949 | 5 | 18 |
| 83 | 9.74565 | 11 | 9.82620 | 17 | 0.17380 | 9.91944 | 5 | 17 |
| 84 | 9.74576 | 11 | 9.82637 | 16 | 0.17363 | 9.91939 | 5 | 16 |
| 85 | 9.74587 | 11 | 9.82653 | 17 | 0.17347 | 9.91934 | 5 | 15 |
| 86 | 9.74598 | 12 | 9.82670 | 16 | 0.17330 | 9.91929 | 5 | 14 |
| 87 | 9.74610 | 11 | 9.82686 | 16 | 0.17314 | 9.91924 | 5 | 13 |
| 88 | 9.74621 | 11 | 9.82702 | 17 | 0.17298 | 9.91919 | 5 | 12 |
| 89 | 9.74632 | 12 | 9.82719 | 16 | 0.17281 | 9.91914 | 6 | 11 |
| 90 | 9.74644 | 11 | 9.82735 | 16 | 0.17265 | 9.91908 | 5 | 10 |
| 91 | 9.74655 | 11 | 9.82751 | 17 | 0.17249 | 9.91903 | 5 | 09 |
| 92 | 9.74666 | 11 | 9.82768 | 16 | 0.17232 | 9.91898 | 5 | 08 |
| 93 | 9.74677 | 12 | 9.82784 | 17 | 0.17216 | 9.91893 | 5 | 07 |
| 94 | 9.74689 | 11 | 9.82801 | 16 | 0.17199 | 9.91888 | 5 | 06 |
| 95 | 9.74700 | 11 | 9.82817 | 16 | 0.17183 | 9.91883 | 5 | 05 |
| 96 | 9.74711 | 11 | 9.82833 | 17 | 0.17167 | 9.91878 | 5 | 04 |
| 97 | 9.74722 | 12 | 9.82850 | 16 | 0.17150 | 9.91873 | 5 | 03 |
| 98 | 9.74734 | 11 | 9.82866 | 16 | 0.17134 | 9.91868 | 5 | 02 |
| 99 | 9.74745 | 11 | 9.82882 | 17 | 0.17118 | 9.91863 | 6 | 01 |
| 100 | 9.74756 | | 9.82899 | | 0.17101 | 9.91857 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 17 | 16 | 12 | 11 | 6 |
|---|---|---|---|---|---|
| 1 | 1.7 | 1.6 | 1.2 | 1.1 | 0.6 |
| 2 | 3.4 | 3.2 | 2.4 | 2.2 | 1.2 |
| 3 | 5.1 | 4.8 | 3.6 | 3.3 | 1.8 |
| 4 | 6.8 | 6.4 | 4.8 | 4.4 | 2.4 |
| 5 | 8.5 | 8.0 | 6.0 | 5.5 | 3.0 |
| 6 | 10.2 | 9.6 | 7.2 | 6.6 | 3.6 |
| 7 | 11.9 | 11.2 | 8.4 | 7.7 | 4.2 |
| 8 | 13.6 | 12.8 | 9.6 | 8.8 | 4.8 |
| 9 | 15.3 | 14.4 | 10.8 | 9.9 | 5.4 |

P. P.

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.74756 | 11 | 9.82899 | 16 | 0.17101 | 9.91857 | 5 | 100 |
| 01 | 9.74767 | 12 | 9.82915 | 16 | 0.17085 | 9.91852 | 5 | 99 |
| 02 | 9.74779 | 11 | 9.82931 | 17 | 0.17069 | 9.91847 | 5 | 98 |
| 03 | 9.74790 | 11 | 9.82948 | 16 | 0.17052 | 9.91842 | 5 | 97 |
| 04 | 9.74801 | 11 | 9.82964 | 16 | 0.17036 | 9.91837 | 5 | 96 |
| 05 | 9.74812 | 12 | 9.82980 | 17 | 0.17020 | 9.91832 | 5 | 95 |
| 06 | 9.74824 | 11 | 9.82997 | 16 | 0.17003 | 9.91827 | 5 | 94 |
| 07 | 9.74835 | 11 | 9.83013 | 16 | 0.16987 | 9.91822 | 6 | 93 |
| 08 | 9.74846 | 11 | 9.83029 | 17 | 0.16971 | 9.91816 | 5 | 92 |
| 09 | 9.74857 | 11 | 9.83046 | 16 | 0.16954 | 9.91811 | 5 | 91 |
| 10 | 9.74868 | 12 | 9.83062 | 16 | 0.16938 | 9.91806 | 5 | 90 |
| 11 | 9.74880 | 11 | 9.83078 | 17 | 0.16922 | 9.91801 | 5 | 89 |
| 12 | 9.74891 | 11 | 9.83095 | 16 | 0.16905 | 9.91796 | 5 | 88 |
| 13 | 9.74902 | 11 | 9.83111 | 16 | 0.16889 | 9.91791 | 5 | 87 |
| 14 | 9.74913 | 11 | 9.83127 | 17 | 0.16873 | 9.91786 | 5 | 86 |
| 15 | 9.74924 | 11 | 9.83144 | 16 | 0.16856 | 9.91781 | 6 | 85 |
| 16 | 9.74935 | 12 | 9.83160 | 16 | 0.16840 | 9.91775 | 5 | 84 |
| 17 | 9.74947 | 11 | 9.83176 | 17 | 0.16824 | 9.91770 | 5 | 83 |
| 18 | 9.74958 | 11 | 9.83193 | 16 | 0.16807 | 9.91765 | 5 | 82 |
| 19 | 9.74969 | 11 | 9.83209 | 16 | 0.16791 | 9.91760 | 5 | 81 |
| 20 | 9.74980 | 11 | 9.83225 | 17 | 0.16775 | 9.91755 | 5 | 80 |
| 21 | 9.74991 | 11 | 9.83242 | 16 | 0.16758 | 9.91750 | 6 | 79 |
| 22 | 9.75002 | 12 | 9.83258 | 16 | 0.16742 | 9.91744 | 5 | 78 |
| 23 | 9.75014 | 11 | 9.83274 | 16 | 0.16726 | 9.91739 | 5 | 77 |
| 24 | 9.75025 | 11 | 9.83290 | 17 | 0.16710 | 9.91734 | 5 | 76 |
| 25 | 9.75036 | 11 | 9.83307 | 16 | 0.16693 | 9.91729 | 5 | 75 |
| 26 | 9.75047 | 11 | 9.83323 | 16 | 0.16677 | 9.91724 | 5 | 74 |
| 27 | 9.75058 | 11 | 9.83339 | 17 | 0.16661 | 9.91719 | 5 | 73 |
| 28 | 9.75069 | 11 | 9.83356 | 16 | 0.16644 | 9.91714 | 6 | 72 |
| 29 | 9.75080 | 11 | 9.83372 | 16 | 0.16628 | 9.91708 | 5 | 71 |
| 30 | 9.75091 | 12 | 9.83388 | 17 | 0.16612 | 9.91703 | 5 | 70 |
| 31 | 9.75103 | 11 | 9.83405 | 16 | 0.16595 | 9.91698 | 5 | 69 |
| 32 | 9.75114 | 11 | 9.83421 | 16 | 0.16579 | 9.91693 | 5 | 68 |
| 33 | 9.75125 | 11 | 9.83437 | 16 | 0.16563 | 9.91688 | 6 | 67 |
| 34 | 9.75136 | 11 | 9.83453 | 17 | 0.16547 | 9.91682 | 5 | 66 |
| 35 | 9.75147 | 11 | 9.83470 | 16 | 0.16530 | 9.91677 | 5 | 65 |
| 36 | 9.75158 | 11 | 9.83486 | 16 | 0.16514 | 9.91672 | 5 | 64 |
| 37 | 9.75169 | 11 | 9.83502 | 16 | 0.16498 | 9.91667 | 5 | 63 |
| 38 | 9.75180 | 11 | 9.83518 | 17 | 0.16482 | 9.91662 | 5 | 62 |
| 39 | 9.75191 | 11 | 9.83535 | 16 | 0.16465 | 9.91657 | 6 | 61 |
| 40 | 9.75202 | 11 | 9.83551 | 16 | 0.16449 | 9.91651 | 5 | 60 |
| 41 | 9.75213 | 11 | 9.83567 | 16 | 0.16433 | 9.91646 | 5 | 59 |
| 42 | 9.75224 | 12 | 9.83583 | 17 | 0.16417 | 9.91641 | 5 | 58 |
| 43 | 9.75236 | 11 | 9.83600 | 16 | 0.16400 | 9.91636 | 5 | 57 |
| 44 | 9.75247 | 11 | 9.83616 | 16 | 0.16384 | 9.91631 | 6 | 56 |
| 45 | 9.75258 | 11 | 9.83632 | 16 | 0.16368 | 9.91625 | 5 | 55 |
| 46 | 9.75269 | 11 | 9.83648 | 17 | 0.16352 | 9.91620 | 5 | 54 |
| 47 | 9.75280 | 11 | 9.83665 | 16 | 0.16335 | 9.91615 | 5 | 53 |
| 48 | 9.75291 | 11 | 9.83681 | 16 | 0.16319 | 9.91610 | 5 | 52 |
| 49 | 9.75302 | 11 | 9.83697 | 16 | 0.16303 | 9.91605 | 6 | 51 |
| 50 | 9.75313 | | 9.83713 | | 0.16287 | 9.91599 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 17 | 16 | 12 | 11 | 5 |
|---|---|---|---|---|---|
| 1 | 1.7 | 1.6 | 1.2 | 1.1 | 0.5 |
| 2 | 3.4 | 3.2 | 2.4 | 2.2 | 1.0 |
| 3 | 5.1 | 4.8 | 3.6 | 3.3 | 1.5 |
| 4 | 6.8 | 6.4 | 4.8 | 4.4 | 2.0 |
| 5 | 8.5 | 8.0 | 6.0 | 5.5 | 2.5 |
| 6 | 10.2 | 9.6 | 7.2 | 6.6 | 3.0 |
| 7 | 11.9 | 11.2 | 8.4 | 7.7 | 3.5 |
| 8 | 13.6 | 12.8 | 9.6 | 8.8 | 4.0 |
| 9 | 15.3 | 14.4 | 10.8 | 9.9 | 4.5 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.75313 | 11 | 9.83713 | 17 | 0.16287 | 9.91599 | 5 | 50 |
| 51 | 9.75324 | 11 | 9.83730 | 16 | 0.16270 | 9.91594 | 5 | 49 |
| 52 | 9.75335 | 11 | 9.83746 | 16 | 0.16254 | 9.91589 | 5 | 48 |
| 53 | 9.75346 | 11 | 9.83762 | 16 | 0.16238 | 9.91584 | 5 | 47 |
| 54 | 9.75357 | 11 | 9.83778 | 17 | 0.16222 | 9.91579 | 6 | 46 |
| 55 | 9.75368 | 11 | 9.83795 | 16 | 0.16205 | 9.91573 | 5 | 45 |
| 56 | 9.75379 | 11 | 9.83811 | 16 | 0.16189 | 9.91568 | 5 | 44 |
| 57 | 9.75390 | 11 | 9.83827 | 16 | 0.16173 | 9.91563 | 5 | 43 |
| 58 | 9.75401 | 11 | 9.83843 | 16 | 0.16157 | 9.91558 | 6 | 42 |
| 59 | 9.75412 | 11 | 9.83859 | 17 | 0.16141 | 9.91552 | 5 | 41 |
| 60 | 9.75423 | 11 | 9.83876 | 16 | 0.16124 | 9.91547 | 5 | 40 |
| 61 | 9.75434 | 11 | 9.83892 | 16 | 0.16108 | 9.91542 | 5 | 39 |
| 62 | 9.75445 | 11 | 9.83908 | 16 | 0.16092 | 9.91537 | 6 | 38 |
| 63 | 9.75456 | 11 | 9.83924 | 17 | 0.16076 | 9.91531 | 5 | 37 |
| 64 | 9.75467 | 11 | 9.83941 | 16 | 0.16059 | 9.91526 | 5 | 36 |
| 65 | 9.75478 | 11 | 9.83957 | 16 | 0.16043 | 9.91521 | 5 | 35 |
| 66 | 9.75489 | 11 | 9.83973 | 16 | 0.16027 | 9.91516 | 5 | 34 |
| 67 | 9.75500 | 11 | 9.83989 | 16 | 0.16011 | 9.91511 | 6 | 33 |
| 68 | 9.75511 | 11 | 9.84005 | 17 | 0.15995 | 9.91505 | 5 | 32 |
| 69 | 9.75522 | 11 | 9.84022 | 16 | 0.15978 | 9.91500 | 5 | 31 |
| 70 | 9.75533 | 11 | 9.84038 | 16 | 0.15962 | 9.91495 | 5 | 30 |
| 71 | 9.75544 | 10 | 9.84054 | 16 | 0.15946 | 9.91490 | 6 | 29 |
| 72 | 9.75554 | 11 | 9.84070 | 16 | 0.15930 | 9.91484 | 5 | 28 |
| 73 | 9.75565 | 11 | 9.84086 | 17 | 0.15914 | 9.91479 | 5 | 27 |
| 74 | 9.75576 | 11 | 9.84103 | 16 | 0.15897 | 9.91474 | 5 | 26 |
| 75 | 9.75587 | 11 | 9.84119 | 16 | 0.15881 | 9.91469 | 6 | 25 |
| 76 | 9.75598 | 11 | 9.84135 | 16 | 0.15865 | 9.91463 | 5 | 24 |
| 77 | 9.75609 | 11 | 9.84151 | 16 | 0.15849 | 9.91458 | 5 | 23 |
| 78 | 9.75620 | 11 | 9.84167 | 16 | 0.15833 | 9.91453 | 6 | 22 |
| 79 | 9.75631 | 11 | 9.84183 | 17 | 0.15817 | 9.91447 | 5 | 21 |
| 80 | 9.75642 | 11 | 9.84200 | 16 | 0.15800 | 9.91442 | 5 | 20 |
| 81 | 9.75653 | 11 | 9.84216 | 16 | 0.15784 | 9.91437 | 5 | 19 |
| 82 | 9.75664 | 11 | 9.84232 | 16 | 0.15768 | 9.91432 | 6 | 18 |
| 83 | 9.75675 | 10 | 9.84248 | 16 | 0.15752 | 9.91426 | 5 | 17 |
| 84 | 9.75685 | 11 | 9.84264 | 16 | 0.15736 | 9.91421 | 5 | 16 |
| 85 | 9.75696 | 11 | 9.84280 | 17 | 0.15720 | 9.91416 | 5 | 15 |
| 86 | 9.75707 | 11 | 9.84297 | 16 | 0.15703 | 9.91411 | 6 | 14 |
| 87 | 9.75718 | 11 | 9.84313 | 16 | 0.15687 | 9.91405 | 5 | 13 |
| 88 | 9.75729 | 11 | 9.84329 | 16 | 0.15671 | 9.91400 | 5 | 12 |
| 89 | 9.75740 | 11 | 9.84345 | 16 | 0.15655 | 9.91395 | 6 | 11 |
| 90 | 9.75751 | 11 | 9.84361 | 16 | 0.15639 | 9.91389 | 5 | 10 |
| 91 | 9.75762 | 10 | 9.84377 | 17 | 0.15623 | 9.91384 | 5 | 09 |
| 92 | 9.75772 | 11 | 9.84394 | 16 | 0.15606 | 9.91379 | 5 | 08 |
| 93 | 9.75783 | 11 | 9.84410 | 16 | 0.15590 | 9.91374 | 6 | 07 |
| 94 | 9.75794 | 11 | 9.84426 | 16 | 0.15574 | 9.91368 | 5 | 06 |
| 95 | 9.75805 | 11 | 9.84442 | 16 | 0.15558 | 9.91363 | 5 | 05 |
| 96 | 9.75816 | 11 | 9.84458 | 16 | 0.15542 | 9.91358 | 6 | 04 |
| 97 | 9.75827 | 10 | 9.84474 | 16 | 0.15526 | 9.91352 | 5 | 03 |
| 98 | 9.75837 | 11 | 9.84490 | 17 | 0.15510 | 9.91347 | 5 | 02 |
| 99 | 9.75848 | 11 | 9.84507 | 16 | 0.15493 | 9.91342 | 6 | 01 |
| 100 | 9.75859 | | 9.84523 | | 0.15477 | 9.91336 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 17 |
|---|---|
| 1 | 1.7 |
| 2 | 3.4 |
| 3 | 5.1 |
| 4 | 6.8 |
| 5 | 8.5 |
| 6 | 10.2 |
| 7 | 11.9 |
| 8 | 13.6 |
| 9 | 15.3 |

| | 16 |
|---|---|
| 1 | 1.6 |
| 2 | 3.2 |
| 3 | 4.8 |
| 4 | 6.4 |
| 5 | 8.0 |
| 6 | 9.6 |
| 7 | 11.2 |
| 8 | 12.8 |
| 9 | 14.4 |

*

| | 11 |
|---|---|
| 1 | 1.1 |
| 2 | 2.2 |
| 3 | 3.3 |
| 4 | 4.4 |
| 5 | 5.5 |
| 6 | 6.6 |
| 7 | 7.7 |
| 8 | 8.8 |
| 9 | 9.9 |

| | 10 |
|---|---|
| 1 | 1.0 |
| 2 | 2.0 |
| 3 | 3.0 |
| 4 | 4.0 |
| 5 | 5.0 |
| 6 | 6.0 |
| 7 | 7.0 |
| 8 | 8.0 |
| 9 | 9.0 |

*

| | 6 |
|---|---|
| 1 | 0.6 |
| 2 | 1.2 |
| 3 | 1.8 |
| 4 | 2.4 |
| 5 | 3.0 |
| 6 | 3.6 |
| 7 | 4.2 |
| 8 | 4.8 |
| 9 | 5.4 |

P. P.

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.75859 | 11 | 9.84523 | 16 | 0.15477 | 9.91336 | 5 | 100 |
| 01 | 9.75870 | 11 | 9.84539 | 16 | 0.15461 | 9.91331 | 5 | 99 |
| 02 | 9.75881 | 11 | 9.84555 | 16 | 0.15445 | 9.91326 | 5 | 98 |
| 03 | 9.75892 | 10 | 9.84571 | 16 | 0.15429 | 9.91321 | 6 | 97 |
| 04 | 9.75902 | 11 | 9.84587 | 16 | 0.15413 | 9.91315 | 5 | 96 |
| 05 | 9.75913 | 11 | 9.84603 | 16 | 0.15397 | 9.91310 | 5 | 95 |
| 06 | 9.75924 | 11 | 9.84619 | 17 | 0.15381 | 9.91305 | 6 | 94 |
| 07 | 9.75935 | 11 | 9.84636 | 16 | 0.15364 | 9.91299 | 5 | 93 |
| 08 | 9.75946 | 10 | 9.84652 | 16 | 0.15348 | 9.91294 | 5 | 92 |
| 09 | 9.75956 | 11 | 9.84668 | 16 | 0.15332 | 9.91289 | 6 | 91 |
| 10 | 9.75967 | 11 | 9.84684 | 16 | 0.15316 | 9.91283 | 5 | 90 |
| 11 | 9.75978 | 11 | 9.84700 | 16 | 0.15300 | 9.91278 | 5 | 89 |
| 12 | 9.75989 | 11 | 9.84716 | 16 | 0.15284 | 9.91273 | 6 | 88 |
| 13 | 9.76000 | 10 | 9.84732 | 16 | 0.15268 | 9.91267 | 5 | 87 |
| 14 | 9.76010 | 11 | 9.84748 | 16 | 0.15252 | 9.91262 | 5 | 86 |
| 15 | 9.76021 | 11 | 9.84764 | 17 | 0.15236 | 9.91257 | 6 | 85 |
| 16 | 9.76032 | 11 | 9.84781 | 16 | 0.15219 | 9.91251 | 5 | 84 |
| 17 | 9.76043 | 10 | 9.84797 | 16 | 0.15203 | 9.91246 | 5 | 83 |
| 18 | 9.76053 | 11 | 9.84813 | 16 | 0.15187 | 9.91241 | 6 | 82 |
| 19 | 9.76064 | 11 | 9.84829 | 16 | 0.15171 | 9.91235 | 5 | 81 |
| 20 | 9.76075 | 11 | 9.84845 | 16 | 0.15155 | 9.91230 | 5 | 80 |
| 21 | 9.76086 | 10 | 9.84861 | 16 | 0.15139 | 9.91225 | 6 | 79 |
| 22 | 9.76096 | 11 | 9.84877 | 16 | 0.15123 | 9.91219 | 5 | 78 |
| 23 | 9.76107 | 11 | 9.84893 | 16 | 0.15107 | 9.91214 | 5 | 77 |
| 24 | 9.76118 | 11 | 9.84909 | 16 | 0.15091 | 9.91209 | 6 | 76 |
| 25 | 9.76129 | 10 | 9.84925 | 16 | 0.15075 | 9.91203 | 5 | 75 |
| 26 | 9.76139 | 11 | 9.84941 | 17 | 0.15059 | 9.91198 | 6 | 74 |
| 27 | 9.76150 | 11 | 9.84958 | 16 | 0.15042 | 9.91192 | 5 | 73 |
| 28 | 9.76161 | 10 | 9.84974 | 16 | 0.15026 | 9.91187 | 5 | 72 |
| 29 | 9.76171 | 11 | 9.84990 | 16 | 0.15010 | 9.91182 | 6 | 71 |
| 30 | 9.76182 | 11 | 9.85006 | 16 | 0.14994 | 9.91176 | 5 | 70 |
| 31 | 9.76193 | 10 | 9.85022 | 16 | 0.14978 | 9.91171 | 5 | 69 |
| 32 | 9.76203 | 11 | 9.85038 | 16 | 0.14962 | 9.91166 | 6 | 68 |
| 33 | 9.76214 | 11 | 9.85054 | 16 | 0.14946 | 9.91160 | 5 | 67 |
| 34 | 9.76225 | 11 | 9.85070 | 16 | 0.14930 | 9.91155 | 6 | 66 |
| 35 | 9.76236 | 10 | 9.85086 | 16 | 0.14914 | 9.91149 | 5 | 65 |
| 36 | 9.76246 | 11 | 9.85102 | 16 | 0.14898 | 9.91144 | 5 | 64 |
| 37 | 9.76257 | 11 | 9.85118 | 16 | 0.14882 | 9.91139 | 6 | 63 |
| 38 | 9.76268 | 10 | 9.85134 | 16 | 0.14866 | 9.91133 | 5 | 62 |
| 39 | 9.76278 | 11 | 9.85150 | 16 | 0.14850 | 9.91128 | 5 | 61 |
| 40 | 9.76289 | 11 | 9.85166 | 16 | 0.14834 | 9.91123 | 6 | 60 |
| 41 | 9.76300 | 10 | 9.85182 | 16 | 0.14818 | 9.91117 | 5 | 59 |
| 42 | 9.76310 | 11 | 9.85198 | 17 | 0.14802 | 9.91112 | 6 | 58 |
| 43 | 9.76321 | 11 | 9.85215 | 16 | 0.14785 | 9.91106 | 5 | 57 |
| 44 | 9.76332 | 10 | 9.85231 | 16 | 0.14769 | 9.91101 | 5 | 56 |
| 45 | 9.76342 | 11 | 9.85247 | 16 | 0.14753 | 9.91096 | 6 | 55 |
| 46 | 9.76353 | 11 | 9.85263 | 16 | 0.14737 | 9.91090 | 5 | 54 |
| 47 | 9.76364 | 10 | 9.85279 | 16 | 0.14721 | 9.91085 | 6 | 53 |
| 48 | 9.76374 | 11 | 9.85295 | 16 | 0.14705 | 9.91079 | 5 | 52 |
| 49 | 9.76385 | 10 | 9.85311 | 16 | 0.14689 | 9.91074 | 5 | 51 |
| 50 | 9.76395 | | 9.85327 | | 0.14673 | 9.91069 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 17 | 16 | 11 | 10 | 5 |
|---|---|---|---|---|---|
| 1 | 1.7 | 1.6 | 1.1 | 1.0 | 0.5 |
| 2 | 3.4 | 3.2 | 2.2 | 2.0 | 1.0 |
| 3 | 5.1 | 4.8 | 3.3 | 3.0 | 1.5 |
| 4 | 6.8 | 6.4 | 4.4 | 4.0 | 2.0 |
| 5 | 8.5 | 8.0 | 5.5 | 5.0 | 2.5 |
| 6 | 10.2 | 9.6 | 6.6 | 6.0 | 3.0 |
| 7 | 11.9 | 11.2 | 7.7 | 7.0 | 3.5 |
| 8 | 13.6 | 12.8 | 8.8 | 8.0 | 4.0 |
| 9 | 15.3 | 14.4 | 9.9 | 9.0 | 4.5 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.76395 | 11 | 9.85327 | 16 | 0.14673 | 9.91069 | 6 | 50 |
| 51 | 9.76406 | 11 | 9.85343 | 16 | 0.14657 | 9.91063 | 5 | 49 |
| 52 | 9.76417 | 10 | 9.85359 | 16 | 0.14641 | 9.91058 | 6 | 48 |
| 53 | 9.76427 | 11 | 9.85375 | 16 | 0.14625 | 9.91052 | 5 | 47 |
| 54 | 9.76438 | 10 | 9.85391 | 16 | 0.14609 | 9.91047 | 5 | 46 |
| 55 | 9.76448 | 11 | 9.85407 | 16 | 0.14593 | 9.91042 | 6 | 45 |
| 56 | 9.76459 | 11 | 9.85423 | 16 | 0.14577 | 9.91036 | 5 | 44 |
| 57 | 9.76470 | 10 | 9.85439 | 16 | 0.14561 | 9.91031 | 6 | 43 |
| 58 | 9.76480 | 11 | 9.85455 | 16 | 0.14545 | 9.91025 | 5 | 42 |
| 59 | 9.76491 | 10 | 9.85471 | 16 | 0.14529 | 9.91020 | 6 | 41 |
| 60 | 9.76501 | 11 | 9.85487 | 16 | 0.14513 | 9.91014 | 5 | 40 |
| 61 | 9.76512 | 11 | 9.85503 | 16 | 0.14497 | 9.91009 | 5 | 39 |
| 62 | 9.76523 | 10 | 9.85519 | 16 | 0.14481 | 9.91004 | 6 | 38 |
| 63 | 9.76533 | 11 | 9.85535 | 16 | 0.14465 | 9.90998 | 5 | 37 |
| 64 | 9.76544 | 10 | 9.85551 | 16 | 0.14449 | 9.90993 | 6 | 36 |
| 65 | 9.76554 | 11 | 9.85567 | 16 | 0.14433 | 9.90987 | 5 | 35 |
| 66 | 9.76565 | 10 | 9.85583 | 16 | 0.14417 | 9.90982 | 6 | 34 |
| 67 | 9.76575 | 11 | 9.85599 | 16 | 0.14401 | 9.90976 | 5 | 33 |
| 68 | 9.76586 | 11 | 9.85615 | 16 | 0.14385 | 9.90971 | 5 | 32 |
| 69 | 9.76597 | 10 | 9.85631 | 16 | 0.14369 | 9.90966 | 6 | 31 |
| 70 | 9.76607 | 11 | 9.85647 | 16 | 0.14353 | 9.90960 | 5 | 30 |
| 71 | 9.76618 | 10 | 9.85663 | 16 | 0.14337 | 9.90955 | 6 | 29 |
| 72 | 9.76628 | 11 | 9.85679 | 16 | 0.14321 | 9.90949 | 5 | 28 |
| 73 | 9.76639 | 10 | 9.85695 | 16 | 0.14305 | 9.90944 | 6 | 27 |
| 74 | 9.76649 | 11 | 9.85711 | 16 | 0.14289 | 9.90938 | 5 | 26 |
| 75 | 9.76660 | 10 | 9.85727 | 16 | 0.14273 | 9.90933 | 6 | 25 |
| 76 | 9.76670 | 11 | 9.85743 | 16 | 0.14257 | 9.90927 | 5 | 24 |
| 77 | 9.76681 | 10 | 9.85759 | 16 | 0.14241 | 9.90922 | 6 | 23 |
| 78 | 9.76691 | 11 | 9.85775 | 16 | 0.14225 | 9.90916 | 5 | 22 |
| 79 | 9.76702 | 10 | 9.85791 | 16 | 0.14209 | 9.90911 | 5 | 21 |
| 80 | 9.76712 | 11 | 9.85807 | 16 | 0.14193 | 9.90906 | 6 | 20 |
| 81 | 9.76723 | 10 | 9.85823 | 16 | 0.14177 | 9.90900 | 5 | 19 |
| 82 | 9.76733 | 11 | 9.85839 | 16 | 0.14161 | 9.90895 | 6 | 18 |
| 83 | 9.76744 | 10 | 9.85855 | 16 | 0.14145 | 9.90889 | 5 | 17 |
| 84 | 9.76754 | 11 | 9.85871 | 16 | 0.14129 | 9.90884 | 6 | 16 |
| 85 | 9.76765 | 10 | 9.85887 | 16 | 0.14113 | 9.90878 | 5 | 15 |
| 86 | 9.76775 | 11 | 9.85903 | 16 | 0.14097 | 9.90873 | 6 | 14 |
| 87 | 9.76786 | 10 | 9.85919 | 16 | 0.14081 | 9.90867 | 5 | 13 |
| 88 | 9.76796 | 11 | 9.85935 | 16 | 0.14065 | 9.90862 | 6 | 12 |
| 89 | 9.76807 | 10 | 9.85951 | 16 | 0.14049 | 9.90856 | 5 | 11 |
| 90 | 9.76817 | 11 | 9.85967 | 16 | 0.14033 | 9.90851 | 6 | 10 |
| 91 | 9.76828 | 10 | 9.85983 | 16 | 0.14017 | 9.90845 | 5 | 09 |
| 92 | 9.76838 | 11 | 9.85999 | 15 | 0.14001 | 9.90840 | 6 | 08 |
| 93 | 9.76849 | 10 | 9.86014 | 16 | 0.13986 | 9.90834 | 5 | 07 |
| 94 | 9.76859 | 11 | 9.86030 | 16 | 0.13970 | 9.90829 | 6 | 06 |
| 95 | 9.76870 | 10 | 9.86046 | 16 | 0.13954 | 9.90823 | 5 | 05 |
| 96 | 9.76880 | 11 | 9.86062 | 16 | 0.13938 | 9.90818 | 6 | 04 |
| 97 | 9.76891 | 10 | 9.86078 | 16 | 0.13922 | 9.90812 | 5 | 03 |
| 98 | 9.76901 | 10 | 9.86094 | 16 | 0.13906 | 9.90807 | 6 | 02 |
| 99 | 9.76911 | 11 | 9.86110 | 16 | 0.13890 | 9.90801 | 5 | 01 |
| 100 | 9.76922 | | 9.86126 | | 0.13874 | 9.90796 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 11 | 10 | 6 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 1.1 | 1.0 | 0.6 |
| 2 | 3.2 | 3.0 | 2.2 | 2.0 | 1.2 |
| 3 | 4.8 | 4.5 | 3.3 | 3.0 | 1.8 |
| 4 | 6.4 | 6.0 | 4.4 | 4.0 | 2.4 |
| 5 | 8.0 | 7.5 | 5.5 | 5.0 | 3.0 |
| 6 | 9.6 | 9.0 | 6.6 | 6.0 | 3.6 |
| 7 | 11.2 | 10.5 | 7.7 | 7.0 | 4.2 |
| 8 | 12.8 | 12.0 | 8.8 | 8.0 | 4.8 |
| 9 | 14.4 | 13.5 | 9.9 | 9.0 | 5.4 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | | P. P. |
|---|---|---|---|---|---|---|---|---|---|
| 00 | 9.76922 | 10 | 9.86126 | 16 | 0.13874 | 9.90796 | 6 | 100 | 16 |
| 01 | 9.76932 | 11 | 9.86142 | 16 | 0.13858 | 9.90790 | 5 | 99 | 1 1.6 |
| 02 | 9.76943 | 10 | 9.86158 | 16 | 0.13842 | 9.90785 | 6 | 98 | 2 3.2 |
| 03 | 9.76953 | 11 | 9.86174 | 16 | 0.13826 | 9.90779 | 5 | 97 | 3 4.8 |
| 04 | 9.76964 | 10 | 9.86190 | 16 | 0.13810 | 9.90774 | 6 | 96 | 4 6.4 |
| 05 | 9.76974 | 10 | 9.86206 | 16 | 0.13794 | 9.90768 | 5 | 95 | 5 8.0 |
| 06 | 9.76984 | 11 | 9.86222 | 16 | 0.13778 | 9.90763 | 6 | 94 | 6 9.6 |
| 07 | 9.76995 | 10 | 9.86238 | 16 | 0.13762 | 9.90757 | 5 | 93 | 7 11.2 |
| 08 | 9.77005 | 11 | 9.86254 | 15 | 0.13746 | 9.90752 | 6 | 92 | 8 12.8 |
| 09 | 9.77016 | 10 | 9.86269 | 16 | 0.13731 | 9.90746 | 5 | 91 | 9 14.4 |
| 10 | 9.77026 | 10 | 9.86285 | 16 | 0.13715 | 9.90741 | 6 | 90 | 15 |
| 11 | 9.77036 | 11 | 9.86301 | 16 | 0.13699 | 9.90735 | 5 | 89 | 1 1.5 |
| 12 | 9.77047 | 10 | 9.86317 | 16 | 0.13683 | 9.90730 | 6 | 88 | 2 3.0 |
| 13 | 9.77057 | 11 | 9.86333 | 16 | 0.13667 | 9.90724 | 6 | 87 | 3 4.5 |
| 14 | 9.77068 | 10 | 9.86349 | 16 | 0.13651 | 9.90718 | 5 | 86 | 4 6.0 |
| 15 | 9.77078 | 10 | 9.86365 | 16 | 0.13635 | 9.90713 | 6 | 85 | 5 7.5 |
| 16 | 9.77088 | 11 | 9.86381 | 16 | 0.13619 | 9.90707 | 5 | 84 | 6 9.0 |
| 17 | 9.77099 | 10 | 9.86397 | 16 | 0.13603 | 9.90702 | 6 | 83 | 7 10.5 |
| 18 | 9.77109 | 10 | 9.86413 | 16 | 0.13587 | 9.90696 | 5 | 82 | 8 12.0 |
| 19 | 9.77119 | 11 | 9.86429 | 16 | 0.13571 | 9.90691 | 6 | 81 | 9 13.5 |
| 20 | 9.77130 | 10 | 9.86445 | 15 | 0.13555 | 9.90685 | 5 | 80 | * 11 |
| 21 | 9.77140 | 10 | 9.86460 | 16 | 0.13540 | 9.90680 | 6 | 79 | 1 1.1 |
| 22 | 9.77150 | 11 | 9.86476 | 16 | 0.13524 | 9.90674 | 5 | 78 | 2 2.2 |
| 23 | 9.77161 | 10 | 9.86492 | 16 | 0.13508 | 9.90669 | 6 | 77 | 3 3.3 |
| 24 | 9.77171 | 10 | 9.86508 | 16 | 0.13492 | 9.90663 | 6 | 76 | 4 4.4 |
| 25 | 9.77181 | 11 | 9.86524 | 16 | 0.13476 | 9.90657 | 5 | 75 | 5 5.5 |
| 26 | 9.77192 | 10 | 9.86540 | 16 | 0.13460 | 9.90652 | 6 | 74 | 6 6.6 |
| 27 | 9.77202 | 10 | 9.86556 | 16 | 0.13444 | 9.90646 | 5 | 73 | 7 7.7 |
| 28 | 9.77212 | 11 | 9.86572 | 16 | 0.13428 | 9.90641 | 6 | 72 | 8 8.8 |
| 29 | 9.77223 | 10 | 9.86588 | 15 | 0.13412 | 9.90635 | 5 | 71 | 9 9.9 |
| 30 | 9.77233 | 10 | 9.86603 | 16 | 0.13397 | 9.90630 | 6 | 70 | 10 |
| 31 | 9.77243 | 11 | 9.86619 | 16 | 0.13381 | 9.90624 | 6 | 69 | 1 1.0 |
| 32 | 9.77254 | 1C | 9.86635 | 16 | 0.13365 | 9.90618 | 5 | 68 | 2 2.0 |
| 33 | 9.77264 | 10 | 9.86651 | 16 | 0.13349 | 9.90613 | 6 | 67 | 3 3.0 |
| 34 | 9.77274 | 11 | 9.86667 | 16 | 0.13333 | 9.90607 | 5 | 66 | 4 4.0 |
| 35 | 9.77285 | 10 | 9.86683 | 16 | 0.13317 | 9.90602 | 6 | 65 | 5 5.0 |
| 36 | 9.77295 | 10 | 9.86699 | 16 | 0.13301 | 9.90596 | 5 | 64 | 6 6.0 |
| 37 | 9.77305 | 11 | 9.86715 | 16 | 0.13285 | 9.90591 | 6 | 63 | 7 7.0 |
| 38 | 9.77316 | 10 | 9.86731 | 15 | 0.13269 | 9.90585 | 6 | 62 | 8 8.0 |
| 39 | 9.77326 | 10 | 9.86746 | 16 | 0.13254 | 9.90579 | 5 | 61 | 9 9.0 |
| 40 | 9.77336 | 10 | 9.86762 | 16 | 0.13238 | 9.90574 | 6 | 60 | * |
| 41 | 9.77346 | 11 | 9.86778 | 16 | 0.13222 | 9.90568 | 5 | 59 | 5 |
| 42 | 9.77357 | 10 | 9.86794 | 16 | 0.13206 | 9.90563 | 6 | 58 | 1 0.5 |
| 43 | 9.77367 | 10 | 9.86810 | 16 | 0.13190 | 9.90557 | 6 | 57 | 2 1.0 |
| 44 | 9.77377 | 10 | 9.86826 | 16 | 0.13174 | 9.90551 | 5 | 56 | 3 1.5 |
| 45 | 9.77387 | 11 | 9.86842 | 15 | 0.13158 | 9.90546 | 6 | 55 | 4 2.0 |
| 46 | 9.77398 | 10 | 9.86857 | 16 | 0.13143 | 9.90540 | 5 | 54 | 5 2.5 |
| 47 | 9.77408 | 10 | 9.86873 | 16 | 0.13127 | 9.90535 | 6 | 53 | 6 3.0 |
| 48 | 9.77418 | 11 | 9.86889 | 16 | 0.13111 | 9.90529 | 6 | 52 | 7 3.5 |
| 49 | 9.77429 | 10 | 9.86905 | 16 | 0.13095 | 9.90523 | 5 | 51 | 8 4.0 |
| 50 | 9.77439 | | 9.86921 | | 0.13079 | 9.90518 | | 50 | 9 4.5 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | | P. P. |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.77439 | 10 | 9.86921 | 16 | 0.13079 | 9.90518 | 6 | 50 |
| 51 | 9.77449 | 10 | 9.86937 | 16 | 0.13063 | 9.90512 | 5 | 49 |
| 52 | 9.77459 | 10 | 9.86953 | 15 | 0.13047 | 9.90507 | 6 | 48 |
| 53 | 9.77469 | 11 | 9.86968 | 16 | 0.13032 | 9.90501 | 6 | 47 |
| 54 | 9.77480 | 10 | 9.86984 | 16 | 0.13016 | 9.90495 | 5 | 46 |
| 55 | 9.77490 | 10 | 9.87000 | 16 | 0.13000 | 9.90490 | 6 | 45 |
| 56 | 9.77500 | 10 | 9.87016 | 16 | 0.12984 | 9.90484 | 5 | 44 |
| 57 | 9.77510 | 11 | 9.87032 | 16 | 0.12968 | 9.90479 | 6 | 43 |
| 58 | 9.77521 | 10 | 9.87048 | 15 | 0.12952 | 9.90473 | 6 | 42 |
| 59 | 9.77531 | 10 | 9.87063 | 16 | 0.12937 | 9.90467 | 5 | 41 |
| 60 | 9.77541 | 10 | 9.87079 | 16 | 0.12921 | 9.90462 | 6 | 40 |
| 61 | 9.77551 | 10 | 9.87095 | 16 | 0.12905 | 9.90456 | 6 | 39 |
| 62 | 9.77561 | 11 | 9.87111 | 16 | 0.12889 | 9.90450 | 5 | 38 |
| 63 | 9.77572 | 10 | 9.87127 | 16 | 0.12873 | 9.90445 | 6 | 37 |
| 64 | 9.77582 | 10 | 9.87143 | 15 | 0.12857 | 9.90439 | 5 | 36 |
| 65 | 9.77592 | 10 | 9.87158 | 16 | 0.12842 | 9.90434 | 6 | 35 |
| 66 | 9.77602 | 10 | 9.87174 | 16 | 0.12826 | 9.90428 | 6 | 34 |
| 67 | 9.77612 | 11 | 9.87190 | 16 | 0.12810 | 9.90422 | 5 | 33 |
| 68 | 9.77623 | 10 | 9.87206 | 16 | 0.12794 | 9.90417 | 6 | 32 |
| 69 | 9.77633 | 10 | 9.87222 | 16 | 0.12778 | 9.90411 | 6 | 31 |
| 70 | 9.77643 | 10 | 9.87238 | 15 | 0.12762 | 9.90405 | 5 | 30 |
| 71 | 9.77653 | 10 | 9.87253 | 16 | 0.12747 | 9.90400 | 6 | 29 |
| 72 | 9.77663 | 10 | 9.87269 | 16 | 0.12731 | 9.90394 | 6 | 28 |
| 73 | 9.77673 | 11 | 9.87285 | 16 | 0.12715 | 9.90388 | 5 | 27 |
| 74 | 9.77684 | 10 | 9.87301 | 16 | 0.12699 | 9.90383 | 6 | 26 |
| 75 | 9.77694 | 10 | 9.87317 | 15 | 0.12683 | 9.90377 | 6 | 25 |
| 76 | 9.77704 | 10 | 9.87332 | 16 | 0.12668 | 9.90371 | 5 | 24 |
| 77 | 9.77714 | 10 | 9.87348 | 16 | 0.12652 | 9.90366 | 6 | 23 |
| 78 | 9.77724 | 10 | 9.87364 | 16 | 0.12636 | 9.90360 | 6 | 22 |
| 79 | 9.77734 | 10 | 9.87380 | 16 | 0.12620 | 9.90354 | 5 | 21 |
| 80 | 9.77744 | 11 | 9.87396 | 16 | 0.12604 | 9.90349 | 6 | 20 |
| 81 | 9.77755 | 10 | 9.87412 | 15 | 0.12588 | 9.90343 | 6 | 19 |
| 82 | 9.77765 | 10 | 9.87427 | 16 | 0.12573 | 9.90337 | 5 | 18 |
| 83 | 9.77775 | 10 | 9.87443 | 16 | 0.12557 | 9.90332 | 6 | 17 |
| 84 | 9.77785 | 10 | 9.87459 | 16 | 0.12541 | 9.90326 | 6 | 16 |
| 85 | 9.77795 | 10 | 9.87475 | 15 | 0.12525 | 9.90320 | 5 | 15 |
| 86 | 9.77805 | 10 | 9.87490 | 16 | 0.12510 | 9.90315 | 6 | 14 |
| 87 | 9.77815 | 10 | 9.87506 | 16 | 0.12494 | 9.90309 | 6 | 13 |
| 88 | 9.77825 | 10 | 9.87522 | 16 | 0.12478 | 9.90303 | 5 | 12 |
| 89 | 9.77835 | 11 | 9.87538 | 16 | 0.12462 | 9.90298 | 6 | 11 |
| 90 | 9.77846 | 10 | 9.87554 | 15 | 0.12446 | 9.90292 | 6 | 10 |
| 91 | 9.77856 | 10 | 9.87569 | 16 | 0.12431 | 9.90286 | 6 | 09 |
| 92 | 9.77866 | 10 | 9.87585 | 16 | 0.12415 | 9.90280 | 5 | 08 |
| 93 | 9.77876 | 10 | 9.87601 | 16 | 0.12399 | 9.90275 | 6 | 07 |
| 94 | 9.77886 | 10 | 9.87617 | 16 | 0.12383 | 9.90269 | 6 | 06 |
| 95 | 9.77896 | 10 | 9.87633 | 15 | 0.12367 | 9.90263 | 5 | 05 |
| 96 | 9.77906 | 10 | 9.87648 | 16 | 0.12352 | 9.90258 | 6 | 04 |
| 97 | 9.77916 | 10 | 9.87664 | 16 | 0.12336 | 9.90252 | 6 | 03 |
| 98 | 9.77926 | 10 | 9.87680 | 16 | 0.12320 | 9.90246 | 5 | 02 |
| 99 | 9.77936 | 10 | 9.87696 | 15 | 0.12304 | 9.90241 | 6 | 01 |
| 100 | 9.77946 | | 9.87711 | | 0.12289 | 9.90235 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 11 | 10 | 6 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 1.1 | 1.0 | 0.6 |
| 2 | 3.2 | 3.0 | 2.2 | 2.0 | 1.2 |
| 3 | 4.8 | 4.5 | 3.3 | 3.0 | 1.8 |
| 4 | 6.4 | 6.0 | 4.4 | 4.0 | 2.4 |
| 5 | 8.0 | 7.5 | 5.5 | 5.0 | 3.0 |
| 6 | 9.6 | 9.0 | 6.6 | 6.0 | 3.6 |
| 7 | 11.2 | 10.5 | 7.7 | 7.0 | 4.2 |
| 8 | 12.8 | 12.0 | 8.8 | 8.0 | 4.8 |
| 9 | 14.4 | 13.5 | 9.9 | 9.0 | 5.4 |

*

*

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | | P. P. |
|---|---|---|---|---|---|---|---|---|---|
| 00 | 9.77946 | 10 | 9.87711 | 16 | 0.12289 | 9.90235 | 6 | 100 | |
| 01 | 9.77956 | 10 | 9.87727 | 16 | 0.12273 | 9.90229 | 6 | 99 | 16 |
| 02 | 9.77966 | 10 | 9.87743 | 16 | 0.12257 | 9.90223 | 5 | 98 | 1 1.6 |
| 03 | 9.77976 | 11 | 9.87759 | 16 | 0.12241 | 9.90218 | 6 | 97 | 2 3.2 |
| 04 | 9.77987 | 10 | 9.87775 | 15 | 0.12225 | 9.90212 | 6 | 96 | 3 4.8 |
| 05 | 9.77997 | 10 | 9.87790 | 16 | 0.12210 | 9.90206 | 5 | 95 | 4 6.4 |
| 06 | 9.78007 | 10 | 9.87806 | 16 | 0.12194 | 9.90201 | 6 | 94 | 5 8.0 |
| 07 | 9.78017 | 10 | 9.87822 | 16 | 0.12178 | 9.90195 | 6 | 93 | 6 9.6 |
| 08 | 9.78027 | 10 | 9.87838 | 15 | 0.12162 | 9.90189 | 6 | 92 | 7 11.2 |
| 09 | 9.78037 | 10 | 9.87853 | 16 | 0.12147 | 9.90183 | 5 | 91 | 8 12.8 |
| 10 | 9.78047 | 10 | 9.87869 | 16 | 0.12131 | 9.90178 | 6 | 90 | 9 14.4 |
| 11 | 9.78057 | 10 | 9.87885 | 16 | 0.12115 | 9.90172 | 6 | 89 | 15 |
| 12 | 9.78067 | 10 | 9.87901 | 15 | 0.12099 | 9.90166 | 6 | 88 | 1 1.5 |
| 13 | 9.78077 | 10 | 9.87916 | 16 | 0.12084 | 9.90160 | 5 | 87 | 2 3.0 |
| 14 | 9.78087 | 10 | 9.87932 | 16 | 0.12068 | 9.90155 | 6 | 86 | 3 4.5 |
| 15 | 9.78097 | 10 | 9.87948 | 16 | 0.12052 | 9.90149 | 6 | 85 | 4 6.0 |
| 16 | 9.78107 | 10 | 9.87964 | 15 | 0.12036 | 9.90143 | 6 | 84 | 5 7.5 |
| 17 | 9.78117 | 10 | 9.87979 | 16 | 0.12021 | 9.90137 | 5 | 83 | 6 9.0 |
| 18 | 9.78127 | 10 | 9.87995 | 16 | 0.12005 | 9.90132 | 6 | 82 | 7 10.5 |
| 19 | 9.78137 | 10 | 9.88011 | 16 | 0.11989 | 9.90126 | 6 | 81 | 8 12.0 |
| 20 | 9.78147 | 10 | 9.88027 | 15 | 0.11973 | 9.90120 | 6 | 80 | 9 13.5 |
| 21 | 9.78157 | 10 | 9.88042 | 16 | 0.11958 | 9.90114 | 5 | 79 | * |
| 22 | 9.78167 | 10 | 9.88058 | 16 | 0.11942 | 9.90109 | 6 | 78 | 11 |
| 23 | 9.78177 | 10 | 9.88074 | 15 | 0.11926 | 9.90103 | 6 | 77 | 1 1.1 |
| 24 | 9.78187 | 10 | 9.88089 | 16 | 0.11911 | 9.90097 | 6 | 76 | 2 2.2 |
| 25 | 9.78197 | 10 | 9.88105 | 16 | 0.11895 | 9.90091 | 5 | 75 | 3 3.3 |
| 26 | 9.78207 | 10 | 9.88121 | 16 | 0.11879 | 9.90086 | 6 | 74 | 4 4.4 |
| 27 | 9.78217 | 10 | 9.88137 | 15 | 0.11863 | 9.90080 | 6 | 73 | 5 5.5 |
| 28 | 9.78227 | 9 | 9.88152 | 16 | 0.11848 | 9.90074 | 6 | 72 | 6 6.6 |
| 29 | 9.78236 | 10 | 9.88168 | 16 | 0.11832 | 9.90068 | 5 | 71 | 7 7.7 |
| 30 | 9.78246 | 10 | 9.88184 | 16 | 0.11816 | 9.90063 | 6 | 70 | 8 8.8 |
| 31 | 9.78256 | 10 | 9.88200 | 15 | 0.11800 | 9.90057 | 6 | 69 | 9 9.9 |
| 32 | 9.78266 | 10 | 9.88215 | 16 | 0.11785 | 9.90051 | 6 | 68 | 9 |
| 33 | 9.78276 | 10 | 9.88231 | 16 | 0.11769 | 9.90045 | 6 | 67 | 1 0.9 |
| 34 | 9.78286 | 10 | 9.88247 | 15 | 0.11753 | 9.90039 | 5 | 66 | 2 1.8 |
| 35 | 9.78296 | 10 | 9.88262 | 16 | 0.11738 | 9.90034 | 6 | 65 | 3 2.7 |
| 36 | 9.78306 | 10 | 9.88278 | 16 | 0.11722 | 9.90028 | 6 | 64 | 4 3.6 |
| 37 | 9.78316 | 10 | 9.88294 | 16 | 0.11706 | 9.90022 | 6 | 63 | 5 4.5 |
| 38 | 9.78326 | 10 | 9.88310 | 15 | 0.11690 | 9.90016 | 5 | 62 | 6 5.4 |
| 39 | 9.78336 | 10 | 9.88325 | 16 | 0.11675 | 9.90011 | 6 | 61 | 7 6.3 |
| 40 | 9.78346 | 10 | 9.88341 | 16 | 0.11659 | 9.90005 | 6 | 60 | 8 7.2 |
| 41 | 9.78356 | 10 | 9.88357 | 15 | 0.11643 | 9.89999 | 6 | 59 | 9 8.1 |
| 42 | 9.78366 | 9 | 9.88372 | 16 | 0.11628 | 9.89993 | 6 | 58 | * |
| 43 | 9.78375 | 10 | 9.88388 | 16 | 0.11612 | 9.89987 | 5 | 57 | 5 |
| 44 | 9.78385 | 10 | 9.88404 | 16 | 0.11596 | 9.89982 | 6 | 56 | 1 0.5 |
| 45 | 9.78395 | 10 | 9.88420 | 15 | 0.11580 | 9.89976 | 6 | 55 | 2 1.0 |
| 46 | 9.78405 | 10 | 9.88435 | 16 | 0.11565 | 9.89970 | 6 | 54 | 3 1.5 |
| 47 | 9.78415 | 10 | 9.88451 | 16 | 0.11549 | 9.89964 | 6 | 53 | 4 2.0 |
| 48 | 9.78425 | 10 | 9.88467 | 15 | 0.11533 | 9.89958 | 6 | 52 | 5 2.5 |
| 49 | 9.78435 | 10 | 9.88482 | 16 | 0.11518 | 9.89952 | 5 | 51 | 6 3.0 / 7 3.5 / 8 4.0 / 9 4.5 |
| 50 | 9.78445 | | 9.88498 | | 0.11502 | 9.89947 | | 50 | |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | | P. P. |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.78445 | 10 | 9.88498 | 16 | 0.11502 | 9.89947 | 6 | 50 |
| 51 | 9.78455 | 9 | 9.88514 | 15 | 0.11486 | 9.89941 | 6 | 49 |
| 52 | 9.78464 | 10 | 9.88529 | 16 | 0.11471 | 9.89935 | 6 | 48 |
| 53 | 9.78474 | 10 | 9.88545 | 16 | 0.11455 | 9.89929 | 6 | 47 |
| 54 | 9.78484 | 10 | 9.88561 | 16 | 0.11439 | 9.89923 | 5 | 46 |
| 55 | 9.78494 | 10 | 9.88577 | 15 | 0.11423 | 9.89918 | 6 | 45 |
| 56 | 9.78504 | 10 | 9.88592 | 16 | 0.11408 | 9.89912 | 6 | 44 |
| 57 | 9.78514 | 10 | 9.88608 | 16 | 0.11392 | 9.89906 | 6 | 43 |
| 58 | 9.78524 | 9 | 9.88624 | 15 | 0.11376 | 9.89900 | 6 | 42 |
| 59 | 9.78533 | 10 | 9.88639 | 16 | 0.11361 | 9.89894 | 6 | 41 |
| 60 | 9.78543 | 10 | 9.88655 | 16 | 0.11345 | 9.89888 | 5 | 40 |
| 61 | 9.78553 | 10 | 9.88671 | 15 | 0.11329 | 9.89883 | 6 | 39 |
| 62 | 9.78563 | 10 | 9.88686 | 16 | 0.11314 | 9.89877 | 6 | 38 |
| 63 | 9.78573 | 10 | 9.88702 | 16 | 0.11298 | 9.89871 | 6 | 37 |
| 64 | 9.78583 | 9 | 9.88718 | 15 | 0.11282 | 9.89865 | 6 | 36 |
| 65 | 9.78592 | 10 | 9.88733 | 16 | 0.11267 | 9.89859 | 6 | 35 |
| 66 | 9.78602 | 10 | 9.88749 | 16 | 0.11251 | 9.89853 | 6 | 34 |
| 67 | 9.78612 | 10 | 9.88765 | 15 | 0.11235 | 9.89847 | 5 | 33 |
| 68 | 9.78622 | 10 | 9.88780 | 16 | 0.11220 | 9.89842 | 6 | 32 |
| 69 | 9.78632 | 10 | 9.88796 | 16 | 0.11204 | 9.89836 | 6 | 31 |
| 70 | 9.78642 | 9 | 9.88812 | 15 | 0.11188 | 9.89830 | 6 | 30 |
| 71 | 9.78651 | 10 | 9.88827 | 16 | 0.11173 | 9.89824 | 6 | 29 |
| 72 | 9.78661 | 10 | 9.88843 | 16 | 0.11157 | 9.89818 | 6 | 28 |
| 73 | 9.78671 | 10 | 9.88859 | 15 | 0.11141 | 9.89812 | 6 | 27 |
| 74 | 9.78681 | 10 | 9.88874 | 16 | 0.11126 | 9.89806 | 5 | 26 |
| 75 | 9.78691 | 9 | 9.88890 | 16 | 0.11110 | 9.89801 | 6 | 25 |
| 76 | 9.78700 | 10 | 9.88906 | 15 | 0.11094 | 9.89795 | 6 | 24 |
| 77 | 9.78710 | 10 | 9.88921 | 16 | 0.11079 | 9.89789 | 6 | 23 |
| 78 | 9.78720 | 10 | 9.88937 | 16 | 0.11063 | 9.89783 | 6 | 22 |
| 79 | 9.78730 | 9 | 9.88953 | 15 | 0.11047 | 9.89777 | 6 | 21 |
| 80 | 9.78739 | 10 | 9.88968 | 16 | 0.11032 | 9.89771 | 6 | 20 |
| 81 | 9.78749 | 10 | 9.88984 | 16 | 0.11016 | 9.89765 | 6 | 19 |
| 82 | 9.78759 | 10 | 9.89000 | 15 | 0.11000 | 9.89759 | 5 | 18 |
| 83 | 9.78769 | 10 | 9.89015 | 16 | 0.10985 | 9.89754 | 6 | 17 |
| 84 | 9.78 79 | 9 | 9.89031 | 15 | 0.10969 | 9.89748 | 6 | 16 |
| 85 | 9.78788 | 10 | 9.89046 | 16 | 0.10954 | 9.89742 | 6 | 15 |
| 86 | 9.78798 | 10 | 9.89062 | 16 | 0.10938 | 9.89736 | 6 | 14 |
| 87 | 9.78808 | 10 | 9.89078 | 15 | 0.10922 | 9.89730 | 6 | 13 |
| 88 | 9.78818 | 9 | 9.89093 | 16 | 0.10907 | 9.89724 | 6 | 12 |
| 89 | 9.78827 | 10 | 9.89109 | 16 | 0.10891 | 9.89718 | 6 | 11 |
| 90 | 9.78837 | 10 | 9.89125 | 15 | 0.10875 | 9.89712 | 6 | 10 |
| 91 | 9.78847 | 9 | 9.89140 | 16 | 0.10860 | 9.89706 | 5 | 09 |
| 92 | 9.78856 | 10 | 9.89156 | 16 | 0.10844 | 9.89701 | 6 | 08 |
| 93 | 9.78866 | 10 | 9.89172 | 15 | 0.10828 | 9.89695 | 6 | 07 |
| 94 | 9.78876 | 10 | 9.89187 | 16 | 0.10813 | 9.89689 | 6 | 06 |
| 95 | 9.78886 | 9 | 9.89203 | 15 | 0.10797 | 9.89683 | 6 | 05 |
| 96 | 9.78895 | 10 | 9.89218 | 16 | 0.10782 | 9.89677 | 6 | 04 |
| 97 | 9.78905 | 10 | 9.89234 | 16 | 0.10766 | 9.89671 | 6 | 03 |
| 98 | 9.78915 | 9 | 9.89250 | 15 | 0.10750 | 9.89665 | 6 | 02 |
| 99 | 9.78924 | 10 | 9.89265 | 16 | 0.10735 | 9.89659 | 6 | 01 |
| 100 | 9.78934 | | 9.89281 | | 0.10719 | 9.89653 | | 00 |
| | Cos. | d | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 10 | 9 | 6 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 1.0 | 0.9 | 0.6 |
| 2 | 3.2 | 3.0 | 2.0 | 1.8 | 1.2 |
| 3 | 4.8 | 4.5 | 3.0 | 2.7 | 1.8 |
| 4 | 6.4 | 6.0 | 4.0 | 3.6 | 2.4 |
| 5 | 8.0 | 7.5 | 5.0 | 4.5 | 3.0 |
| 6 | 9.6 | 9.0 | 6.0 | 5.4 | 3.6 |
| 7 | 11.2 | 10.5 | 7.0 | 6.3 | 4.2 |
| 8 | 12.8 | 12.0 | 8.0 | 7.2 | 4.8 |
| 9 | 14.4 | 13.5 | 9.0 | 8.1 | 5.4 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | | 
|---|---|---|---|---|---|---|---|---|
| 00 | 9.78934 | 10 | 9.89281 | 16 | 0.10719 | 9.89653 | 6 | 100 |
| 01 | 9.78944 | 10 | 9.89297 | 15 | 0.10703 | 9.89647 | 6 | 99 |
| 02 | 9.78954 | 9 | 9.89312 | 16 | 0.10688 | 9.89641 | 6 | 98 |
| 03 | 9.78963 | 10 | 9.89328 | 15 | 0.10672 | 9.89635 | 5 | 97 |
| 04 | 9.78973 | 10 | 9.89343 | 16 | 0.10657 | 9.89630 | 6 | 96 |
| 05 | 9.78983 | 9 | 9.89359 | 16 | 0.10641 | 9.89624 | 6 | 95 |
| 06 | 9.78992 | 10 | 9.89375 | 15 | 0.10625 | 9.89618 | 6 | 94 |
| 07 | 9.79002 | 10 | 9.89390 | 16 | 0.10610 | 9.89612 | 6 | 93 |
| 08 | 9.79012 | 9 | 9.89406 | 16 | 0.10594 | 9.89606 | 6 | 92 |
| 09 | 9.79021 | 10 | 9.89422 | 15 | 0.10578 | 9.89600 | 6 | 91 |
| 10 | 9.79031 | 10 | 9.89437 | 16 | 0.10563 | 9.89594 | 6 | 90 |
| 11 | 9.79041 | 9 | 9.89453 | 15 | 0.10547 | 9.89588 | 6 | 89 |
| 12 | 9.79050 | 10 | 9.89468 | 16 | 0.10532 | 9.89582 | 6 | 88 |
| 13 | 9.79060 | 10 | 9.89484 | 16 | 0.10516 | 9.89576 | 6 | 87 |
| 14 | 9.79070 | 9 | 9.89500 | 15 | 0.10500 | 9.89570 | 6 | 86 |
| 15 | 9.79079 | 10 | 9.89515 | 16 | 0.10485 | 9.89564 | 6 | 85 |
| 16 | 9.79089 | 10 | 9.89531 | 15 | 0.10469 | 9.89558 | 6 | 84 |
| 17 | 9.79099 | 9 | 9.89546 | 16 | 0.10454 | 9.89552 | 6 | 83 |
| 18 | 9.79108 | 10 | 9.89562 | 16 | 0.10438 | 9.89546 | 6 | 82 |
| 19 | 9.79118 | 10 | 9.89578 | 15 | 0.10422 | 9.89540 | 6 | 81 |
| 20 | 9.79128 | 9 | 9.89593 | 16 | 0.10407 | 9.89534 | 6 | 80 |
| 21 | 9.79137 | 10 | 9.89609 | 15 | 0.10391 | 9.89528 | 6 | 79 |
| 22 | 9.79147 | 9 | 9.89624 | 16 | 0.10376 | 9.89522 | 6 | 78 |
| 23 | 9.79156 | 10 | 9.89640 | 16 | 0.10360 | 9.89516 | 6 | 77 |
| 24 | 9.79166 | 10 | 9.89656 | 15 | 0.10344 | 9.89510 | 6 | 76 |
| 25 | 9.79176 | 9 | 9.89671 | 16 | 0.10329 | 9.89504 | 5 | 75 |
| 26 | 9.79185 | 10 | 9.89687 | 15 | 0.10313 | 9.89499 | 6 | 74 |
| 27 | 9.79195 | 9 | 9.89702 | 16 | 0.10298 | 9.89493 | 6 | 73 |
| 28 | 9.79204 | 10 | 9.89718 | 16 | 0.10282 | 9.89487 | 6 | 72 |
| 29 | 9.79214 | 10 | 9.89734 | 15 | 0.10266 | 9.89481 | 6 | 71 |
| 30 | 9.79224 | 9 | 9.89749 | 16 | 0.10251 | 9.89475 | 6 | 70 |
| 31 | 9.79233 | 10 | 9.89765 | 15 | 0.10235 | 9.89469 | 6 | 69 |
| 32 | 9.79243 | 9 | 9.89780 | 16 | 0.10220 | 9.89463 | 6 | 68 |
| 33 | 9.79252 | 10 | 9.89796 | 15 | 0.10204 | 9.89457 | 6 | 67 |
| 34 | 9.79262 | 10 | 9.89811 | 16 | 0.10189 | 9.89451 | 6 | 66 |
| 35 | 9.79272 | 9 | 9.89827 | 16 | 0.10173 | 9.89445 | 6 | 65 |
| 36 | 9.79281 | 10 | 9.89843 | 15 | 0.10157 | 9.89439 | 6 | 64 |
| 37 | 9.79291 | 9 | 9.89858 | 16 | 0.10142 | 9.89433 | 6 | 63 |
| 38 | 9.79300 | 10 | 9.89874 | 15 | 0.10126 | 9.89427 | 6 | 62 |
| 39 | 9.79310 | 9 | 9.89889 | 16 | 0.10111 | 9.89421 | 6 | 61 |
| 40 | 9.79319 | 10 | 9.89905 | 15 | 0.10095 | 9.89415 | 6 | 60 |
| 41 | 9.79329 | 10 | 9.89920 | 16 | 0.10080 | 9.89409 | 6 | 59 |
| 42 | 9.79339 | 9 | 9.89936 | 16 | 0.10064 | 9.89403 | 6 | 58 |
| 43 | 9.79348 | 10 | 9.89952 | 15 | 0.10048 | 9.89397 | 6 | 57 |
| 44 | 9.79358 | 9 | 9.89967 | 16 | 0.10033 | 9.89391 | 6 | 56 |
| 45 | 9.79367 | 10 | 9.89983 | 15 | 0.10017 | 9.89385 | 6 | 55 |
| 46 | 9.79377 | 9 | 9.89998 | 16 | 0.10002 | 9.89379 | 6 | 54 |
| 47 | 9.79386 | 10 | 9.90014 | 15 | 0.09986 | 9.89373 | 7 | 53 |
| 48 | 9.79396 | 9 | 9.90029 | 16 | 0.09971 | 9.89366 | 6 | 52 |
| 49 | 9.79405 | 10 | 9.90045 | 16 | 0.09955 | 9.89360 | 6 | 51 |
| 50 | 9.79415 | | 9.90061 | | 0.09939 | 9.89354 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 10 | 9 | 6 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 1.0 | 0.9 | 0.6 |
| 2 | 3.2 | 3.0 | 2.0 | 1.8 | 1.2 |
| 3 | 4.8 | 4.5 | 3.0 | 2.7 | 1.8 |
| 4 | 6.4 | 6.0 | 4.0 | 3.6 | 2.4 |
| 5 | 8.0 | 7.5 | 5.0 | 4.5 | 3.0 |
| 6 | 9.6 | 9.0 | 6.0 | 5.4 | 3.6 |
| 7 | 11.2 | 10.5 | 7.0 | 6.3 | 4.2 |
| 8 | 12.8 | 12.0 | 8.0 | 7.2 | 4.8 |
| 9 | 14.4 | 13.5 | 9.0 | 8.1 | 5.4 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.79415 | 9 | 9.90061 | 15 | 0.09939 | 9.89354 | 6 | 50 |
| 51 | 9.79424 | 10 | 9.90076 | 16 | 0.09924 | 9.89348 | 6 | 49 |
| 52 | 9.79434 | 10 | 9.90092 | 15 | 0.09908 | 9.89342 | 6 | 48 |
| 53 | 9.79444 | 9 | 9.90107 | 16 | 0.09893 | 9.89336 | 6 | 47 |
| 54 | 9.79453 | 10 | 9.90123 | 15 | 0.09877 | 9.89330 | 6 | 46 |
| 55 | 9.79463 | 9 | 9.90138 | 16 | 0.09862 | 9.89324 | 6 | 45 |
| 56 | 9.79472 | 10 | 9.90154 | 15 | 0.09846 | 9.89318 | 6 | 44 |
| 57 | 9.79482 | 9 | 9.90169 | 16 | 0.09831 | 9.89312 | 6 | 43 |
| 58 | 9.79491 | 10 | 9.90185 | 15 | 0.09815 | 9.89306 | 6 | 42 |
| 59 | 9.79501 | 9 | 9.90200 | 16 | 0.09800 | 9.89300 | 6 | 41 |
| 60 | 9.79510 | 10 | 9.90216 | 16 | 0.09784 | 9.89294 | 6 | 40 |
| 61 | 9.79520 | 9 | 9.90232 | 15 | 0.09768 | 9.89288 | 6 | 39 |
| 62 | 9.79529 | 10 | 9.90247 | 16 | 0.09753 | 9.89282 | 6 | 38 |
| 63 | 9.79539 | 9 | 9.90263 | 15 | 0.09737 | 9.89276 | 6 | 37 |
| 64 | 9.79548 | 10 | 9.90278 | 16 | 0.09722 | 9.89270 | 6 | 36 |
| 65 | 9.79558 | 9 | 9.90294 | 15 | 0.09706 | 9.89264 | 6 | 35 |
| 66 | 9.79567 | 9 | 9.90309 | 16 | 0.09691 | 9.89258 | 6 | 34 |
| 67 | 9.79576 | 10 | 9.90325 | 15 | 0.09675 | 9.89252 | 6 | 33 |
| 68 | 9.79586 | 9 | 9.90340 | 16 | 0.09660 | 9.89246 | 7 | 32 |
| 69 | 9.79595 | 10 | 9.90356 | 15 | 0.09644 | 9.89239 | 6 | 31 |
| 70 | 9.79605 | 9 | 9.90371 | 16 | 0.09629 | 9.89233 | 6 | 30 |
| 71 | 9.79614 | 10 | 9.90387 | 16 | 0.09613 | 9.89227 | 6 | 29 |
| 72 | 9.79624 | 9 | 9.90403 | 15 | 0.09597 | 9.89221 | 6 | 28 |
| 73 | 9.79633 | 10 | 9.90418 | 16 | 0.09582 | 9.89215 | 6 | 27 |
| 74 | 9.79643 | 9 | 9.90434 | 15 | 0.09566 | 9.89209 | 6 | 26 |
| 75 | 9.79652 | 10 | 9.90449 | 16 | 0.09551 | 9.89203 | 6 | 25 |
| 76 | 9.79662 | 9 | 9.90465 | 15 | 0.09535 | 9.89197 | 6 | 24 |
| 77 | 9.79671 | 9 | 9.90480 | 16 | 0.09520 | 9.89191 | 6 | 23 |
| 78 | 9.79680 | 10 | 9.90496 | 15 | 0.09504 | 9.89185 | 6 | 22 |
| 79 | 9.79690 | 9 | 9.90511 | 16 | 0.09489 | 9.89179 | 6 | 21 |
| 80 | 9.79699 | 10 | 9.90527 | 15 | 0.09473 | 9.89173 | 7 | 20 |
| 81 | 9.79709 | 9 | 9.90542 | 16 | 0.09458 | 9.89166 | 6 | 19 |
| 82 | 9.79718 | 10 | 9.90558 | 15 | 0.09442 | 9.89160 | 6 | 18 |
| 83 | 9.79728 | 9 | 9.90573 | 16 | 0.09427 | 9.89154 | 6 | 17 |
| 84 | 9.79737 | 9 | 9.90589 | 15 | 0.09411 | 9.89148 | 6 | 16 |
| 85 | 9.79746 | 10 | 9.90604 | 16 | 0.09396 | 9.89142 | 6 | 15 |
| 86 | 9.79756 | 9 | 9.90620 | 15 | 0.09380 | 9.89136 | 6 | 14 |
| 87 | 9.79765 | 10 | 9.90635 | 16 | 0.09365 | 9.89130 | 6 | 13 |
| 88 | 9.79775 | 9 | 9.90651 | 15 | 0.09349 | 9.89124 | 6 | 12 |
| 89 | 9.79784 | 9 | 9.90666 | 16 | 0.09334 | 9.89118 | 6 | 11 |
| 90 | 9.79793 | 10 | 9.90682 | 15 | 0.09318 | 9.89112 | 7 | 10 |
| 91 | 9.79803 | 9 | 9.90697 | 16 | 0.09303 | 9.89105 | 6 | 09 |
| 92 | 9.79812 | 10 | 9.90713 | 15 | 0.09287 | 9.89099 | 6 | 08 |
| 93 | 9.79822 | 9 | 9.90728 | 16 | 0.09272 | 9.89093 | 6 | 07 |
| 94 | 9.79831 | 9 | 9.90744 | 15 | 0.09256 | 9.89087 | 6 | 06 |
| 95 | 9.79840 | 10 | 9.90759 | 16 | 0.09241 | 9.89081 | 6 | 05 |
| 96 | 9.79850 | 9 | 9.90775 | 15 | 0.09225 | 9.89075 | 6 | 04 |
| 97 | 9.79859 | 9 | 9.90790 | 16 | 0.09210 | 9.89069 | 6 | 03 |
| 98 | 9.79868 | 10 | 9.90806 | 15 | 0.09194 | 9.89063 | 7 | 02 |
| 99 | 9.79878 | 9 | 9.90821 | 16 | 0.09179 | 9.89056 | 6 | 01 |
| 100 | 9.79887 | | 9.90837 | | 0.09163 | 9.89050 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 10 | 9 | 7 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 1.0 | 0.9 | 0.7 |
| 2 | 3.2 | 3.0 | 2.0 | 1.8 | 1.4 |
| 3 | 4.8 | 4.5 | 3.0 | 2.7 | 2.1 |
| 4 | 6.4 | 6.0 | 4.0 | 3.6 | 2.8 |
| 5 | 8.0 | 7.5 | 5.0 | 4.5 | 3.5 |
| 6 | 9.6 | 9.0 | 6.0 | 5.4 | 4.2 |
| 7 | 11.2 | 10.5 | 7.0 | 6.3 | 4.9 |
| 8 | 12.8 | 12.0 | 8.0 | 7.2 | 5.6 |
| 9 | 14.4 | 13.5 | 9.0 | 8.1 | 6.3 |

# 39°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.79887 | 10 | 9.90837 | 15 | 0.09163 | 9.89050 | 6 | 100 |
| 01 | 9.79897 | 9 | 9.90852 | 16 | 0.09148 | 9.89044 | 6 | 99 |
| 02 | 9.79906 | 9 | 9.90868 | 15 | 0.09132 | 9.89038 | 6 | 98 |
| 03 | 9.79915 | 10 | 9.90883 | 16 | 0.09117 | 9.89032 | 6 | 97 |
| 04 | 9.79925 | 9 | 9.90899 | 15 | 0.09101 | 9.89026 | 6 | 96 |
| 05 | 9.79934 | 9 | 9.90914 | 16 | 0.09086 | 9.89020 | 7 | 95 |
| 06 | 9.79943 | 10 | 9.90930 | 15 | 0.09070 | 9.89013 | 6 | 94 |
| 07 | 9.79953 | 9 | 9.90945 | 16 | 0.09055 | 9.89007 | 6 | 93 |
| 08 | 9.79962 | 9 | 9.90961 | 15 | 0.09039 | 9.89001 | 6 | 92 |
| 09 | 9.79971 | 10 | 9.90976 | 16 | 0.09024 | 9.88995 | 6 | 91 |
| 10 | 9.79981 | 9 | 9.90992 | 15 | 0.09008 | 9.88989 | 6 | 90 |
| 11 | 9.79990 | 9 | 9.91007 | 16 | 0.08993 | 9.88983 | 7 | 89 |
| 12 | 9.79999 | 10 | 9.91023 | 15 | 0.08977 | 9.88976 | 6 | 88 |
| 13 | 9.80009 | 9 | 9.91038 | 16 | 0.08962 | 9.88970 | 6 | 87 |
| 14 | 9.80018 | 9 | 9.91054 | 15 | 0.08946 | 9.88964 | 6 | 86 |
| 15 | 9.80027 | 10 | 9.91069 | 16 | 0.08931 | 9.88958 | 6 | 85 |
| 16 | 9.80037 | 9 | 9.91085 | 15 | 0.08915 | 9.88952 | 6 | 84 |
| 17 | 9.80046 | 9 | 9.91100 | 16 | 0.08900 | 9.88946 | 7 | 83 |
| 18 | 9.80055 | 9 | 9.91116 | 15 | 0.08884 | 9.88939 | 6 | 82 |
| 19 | 9.80064 | 10 | 9.91131 | 16 | 0.08869 | 9.88933 | 6 | 81 |
| 20 | 9.80074 | 9 | 9.91147 | 15 | 0.08853 | 9.88927 | 6 | 80 |
| 21 | 9.80083 | 9 | 9.91162 | 16 | 0.08838 | 9.88921 | 6 | 79 |
| 22 | 9.80092 | 10 | 9.91178 | 15 | 0.08822 | 9.88915 | 6 | 78 |
| 23 | 9.80102 | 9 | 9.91193 | 16 | 0.08807 | 9.88909 | 7 | 77 |
| 24 | 9.80111 | 9 | 9.91209 | 15 | 0.08791 | 9.88902 | 6 | 76 |
| 25 | 9.80120 | 9 | 9.91224 | 15 | 0.08776 | 9.88896 | 6 | 75 |
| 26 | 9.80129 | 10 | 9.91239 | 16 | 0.08761 | 9.88890 | 6 | 74 |
| 27 | 9.80139 | 9 | 9.91255 | 15 | 0.08745 | 9.88884 | 6 | 73 |
| 28 | 9.80148 | 9 | 9.91270 | 16 | 0.08730 | 9.88878 | 7 | 72 |
| 29 | 9.80157 | 9 | 9.91286 | 15 | 0.08714 | 9.88871 | 6 | 71 |
| 30 | 9.80166 | 10 | 9.91301 | 16 | 0.08699 | 9.88865 | 6 | 70 |
| 31 | 9.80176 | 9 | 9.91317 | 15 | 0.08683 | 9.88859 | 6 | 69 |
| 32 | 9.80185 | 9 | 9.91332 | 16 | 0.08668 | 9.88853 | 6 | 68 |
| 33 | 9.80194 | 10 | 9.91348 | 15 | 0.08652 | 9.88847 | 7 | 67 |
| 34 | 9.80204 | 9 | 9.91363 | 16 | 0.08637 | 9.88840 | 6 | 66 |
| 35 | 9.80213 | 9 | 9.91379 | 15 | 0.08621 | 9.88834 | 6 | 65 |
| 36 | 9.80222 | 9 | 9.91394 | 16 | 0.08606 | 9.88828 | 6 | 64 |
| 37 | 9.80231 | 9 | 9.91410 | 15 | 0.08590 | 9.88822 | 7 | 63 |
| 38 | 9.80240 | 10 | 9.91425 | 16 | 0.08575 | 9.88815 | 6 | 62 |
| 39 | 9.80250 | 9 | 9.91441 | 15 | 0.08559 | 9.88809 | 6 | 61 |
| 40 | 9.80259 | 9 | 9.91456 | 15 | 0.08544 | 9.88803 | 6 | 60 |
| 41 | 9.80268 | 9 | 9.91471 | 16 | 0.08529 | 9.88797 | 6 | 59 |
| 42 | 9.80277 | 10 | 9.91487 | 15 | 0.08513 | 9.88791 | 7 | 58 |
| 43 | 9.80287 | 9 | 9.91502 | 16 | 0.08498 | 9.88784 | 6 | 57 |
| 44 | 9.80296 | 9 | 9.91518 | 15 | 0.08482 | 9.88778 | 6 | 56 |
| 45 | 9.80305 | 9 | 9.91533 | 16 | 0.08467 | 9.88772 | 6 | 55 |
| 46 | 9.80314 | 9 | 9.91549 | 15 | 0.08451 | 9.88766 | 7 | 54 |
| 47 | 9.80323 | 10 | 9.91564 | 16 | 0.08436 | 9.88759 | 6 | 53 |
| 48 | 9.80333 | 9 | 9.91580 | 15 | 0.08420 | 9.88753 | 6 | 52 |
| 49 | 9.80342 | 9 | 9.91595 | 15 | 0.08405 | 9.88747 | 6 | 51 |
| 50 | 9.80351 | | 9.91610 | | 0.08390 | 9.88741 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 10 | 9 | 6 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 1.0 | 0.9 | 0.6 |
| 2 | 3.2 | 3.0 | 2.0 | 1.8 | 1.2 |
| 3 | 4.8 | 4.5 | 3.0 | 2.7 | 1.8 |
| 4 | 6.4 | 6.0 | 4.0 | 3.6 | 2.4 |
| 5 | 8.0 | 7.5 | 5.0 | 4.5 | 3.0 |
| 6 | 9.6 | 9.0 | 6.0 | 5.4 | 3.6 |
| 7 | 11.2 | 10.5 | 7.0 | 6.3 | 4.2 |
| 8 | 12.8 | 12.0 | 8.0 | 7.2 | 4.8 |
| 9 | 14.4 | 13.5 | 9.0 | 8.1 | 5.4 |

P. P.

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.80351 | 9 | 9.91610 | 16 | 0.08390 | 9.88741 | 7 | 50 |
| 51 | 9.80360 | 9 | 9.91626 | 15 | 0.08374 | 9.88734 | 6 | 49 |
| 52 | 9.80369 | 10 | 9.91641 | 16 | 0.08359 | 9.88728 | 6 | 48 |
| 53 | 9.80379 | 9 | 9.91657 | 15 | 0.08343 | 9.88722 | 6 | 47 |
| 54 | 9.80388 | 9 | 9.91672 | 16 | 0.08328 | 9.88716 | 7 | 46 |
| 55 | 9.80397 | 9 | 9.91688 | 15 | 0.08312 | 9.88709 | 6 | 45 |
| 56 | 9.80406 | 9 | 9.91703 | 16 | 0.08297 | 9.88703 | 6 | 44 |
| 57 | 9.80415 | 10 | 9.91719 | 15 | 0.08281 | 9.88697 | 6 | 43 |
| 58 | 9.80425 | 9 | 9.91734 | 15 | 0.08266 | 9.88691 | 7 | 42 |
| 59 | 9.80434 | 9 | 9.91749 | 16 | 0.08251 | 9.88684 | 6 | 41 |
| 60 | 9.80443 | 9 | 9.91765 | 15 | 0.08235 | 9.88678 | 6 | 40 |
| 61 | 9.80452 | 9 | 9.91780 | 16 | 0.08220 | 9.88672 | 7 | 39 |
| 62 | 9.80461 | 9 | 9.91796 | 15 | 0.08204 | 9.88665 | 6 | 38 |
| 63 | 9.80470 | 9 | 9.91811 | 16 | 0.08189 | 9.88659 | 6 | 37 |
| 64 | 9.80479 | 10 | 9.91827 | 15 | 0.08173 | 9.88653 | 6 | 36 |
| 65 | 9.80489 | 9 | 9.91842 | 15 | 0.08158 | 9.88647 | 7 | 35 |
| 66 | 9.80498 | 9 | 9.91857 | 16 | 0.08143 | 9.88640 | 6 | 34 |
| 67 | 9.80507 | 9 | 9.91873 | 15 | 0.08127 | 9.88634 | 6 | 33 |
| 68 | 9.80516 | 9 | 9.91888 | 16 | 0.08112 | 9.88628 | 7 | 32 |
| 69 | 9.80525 | 9 | 9.91904 | 15 | 0.08096 | 9.88621 | 6 | 31 |
| 70 | 9.80534 | 9 | 9.91919 | 16 | 0.08081 | 9.88615 | 6 | 30 |
| 71 | 9.80543 | 10 | 9.91935 | 15 | 0.08065 | 9.88609 | 6 | 29 |
| 72 | 9.80553 | 9 | 9.91950 | 15 | 0.08050 | 9.88603 | 7 | 28 |
| 73 | 9.80562 | 9 | 9.91965 | 16 | 0.08035 | 9.88596 | 6 | 27 |
| 74 | 9.80571 | 9 | 9.91981 | 15 | 0.08019 | 9.88590 | 6 | 26 |
| 75 | 9.80580 | 9 | 9.91996 | 16 | 0.08004 | 9.88584 | 7 | 25 |
| 76 | 9.80589 | 9 | 9.92012 | 15 | 0.07988 | 9.88577 | 6 | 24 |
| 77 | 9.80598 | 9 | 9.92027 | 15 | 0.07973 | 9.88571 | 6 | 23 |
| 78 | 9.80607 | 9 | 9.92042 | 16 | 0.07958 | 9.88565 | 7 | 22 |
| 79 | 9.80616 | 9 | 9.92058 | 15 | 0.07942 | 9.88558 | 6 | 21 |
| 80 | 9.80625 | 10 | 9.92073 | 16 | 0.07927 | 9.88552 | 6 | 20 |
| 81 | 9.80635 | 9 | 9.92089 | 15 | 0.07911 | 9.88546 | 6 | 19 |
| 82 | 9.80644 | 9 | 9.92104 | 16 | 0.07896 | 9.88540 | 7 | 18 |
| 83 | 9.80653 | 9 | 9.92120 | 15 | 0.07880 | 9.88533 | 6 | 17 |
| 84 | 9.80662 | 9 | 9.92135 | 15 | 0.07865 | 9.88527 | 6 | 16 |
| 85 | 9.80671 | 9 | 9.92150 | 16 | 0.07850 | 9.88521 | 7 | 15 |
| 86 | 9.80680 | 9 | 9.92166 | 15 | 0.07834 | 9.88514 | 6 | 14 |
| 87 | 9.80689 | 9 | 9.92181 | 16 | 0.07819 | 9.88508 | 6 | 13 |
| 88 | 9.80698 | 9 | 9.92197 | 15 | 0.07803 | 9.88502 | 7 | 12 |
| 89 | 9.80707 | 9 | 9.92212 | 15 | 0.07788 | 9.88495 | 6 | 11 |
| 90 | 9.80716 | 9 | 9.92227 | 16 | 0.07773 | 9.88489 | 6 | 10 |
| 91 | 9.80725 | 9 | 9.92243 | 15 | 0.07757 | 9.88483 | 7 | 09 |
| 92 | 9.80734 | 9 | 9.92258 | 16 | 0.07742 | 9.88476 | 6 | 08 |
| 93 | 9.80743 | 9 | 9.92274 | 15 | 0.07726 | 9.88470 | 6 | 07 |
| 94 | 9.80752 | 10 | 9.92289 | 15 | 0.07711 | 9.88464 | 7 | 06 |
| 95 | 9.80762 | 9 | 9.92304 | 16 | 0.07696 | 9.88457 | 6 | 05 |
| 96 | 9.80771 | 9 | 9.92320 | 15 | 0.07680 | 9.88451 | 7 | 04 |
| 97 | 9.80780 | 9 | 9.92335 | 16 | 0.07665 | 9.88444 | 6 | 03 |
| 98 | 9.80789 | 9 | 9.92351 | 15 | 0.07649 | 9.88438 | 6 | 02 |
| 99 | 9.80798 | 9 | 9.92366 | 15 | 0.07634 | 9.88432 | 7 | 01 |
| 100 | 9.80807 | | 9.92381 | | 0.07619 | 9.88425 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 10 | 9 | 7 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 1.0 | 0.9 | 0.7 |
| 2 | 3.2 | 3.0 | 2.0 | 1.8 | 1.4 |
| 3 | 4.8 | 4.5 | 3.0 | 2.7 | 2.1 |
| 4 | 6.4 | 6.0 | 4.0 | 3.6 | 2.8 |
| 5 | 8.0 | 7.5 | 5.0 | 4.5 | 3.5 |
| 6 | 9.6 | 9.0 | 6.0 | 5.4 | 4.2 |
| 7 | 11.2 | 10.5 | 7.0 | 6.3 | 4.9 |
| 8 | 12.8 | 12.0 | 8.0 | 7.2 | 5.6 |
| 9 | 14.4 | 13.5 | 9.0 | 8.1 | 6.3 |

# 40°

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | | 
|---|---|---|---|---|---|---|---|---|
| 00 | 9.80807 | 9 | 9.92381 | 16 | 0.07619 | 9.88425 | 6 | 100 |
| 01 | 9.80816 | 9 | 9.92397 | 15 | 0.07603 | 9.88419 | 6 | 99 |
| 02 | 9.80825 | 9 | 9.92412 | 16 | 0.07588 | 9.88413 | 7 | 98 |
| 03 | 9.80834 | 9 | 9.92428 | 15 | 0.07572 | 9.88406 | 6 | 97 |
| 04 | 9.80843 | 9 | 9.92443 | 15 | 0.07557 | 9.88400 | 6 | 96 |
| 05 | 9.80852 | 9 | 9.92458 | 16 | 0.07542 | 9.88394 | 7 | 95 |
| 06 | 9.80861 | 9 | 9.92474 | 15 | 0.07526 | 9.88387 | 6 | 94 |
| 07 | 9.80870 | 9 | 9.92489 | 15 | 0.07511 | 9.88381 | 7 | 93 |
| 08 | 9.80879 | 9 | 9.92504 | 16 | 0.07496 | 9.88374 | 6 | 92 |
| 09 | 9.80888 | 9 | 9.92520 | 15 | 0.07480 | 9.88368 | 6 | 91 |
| 10 | 9.80897 | 9 | 9.92535 | 16 | 0.07465 | 9.88362 | 7 | 90 |
| 11 | 9.80906 | 9 | 9.92551 | 15 | 0.07449 | 9.88355 | 6 | 89 |
| 12 | 9.80915 | 9 | 9.92566 | 15 | 0.07434 | 9.88349 | 6 | 88 |
| 13 | 9.80924 | 9 | 9.92581 | 16 | 0.07419 | 9.88343 | 7 | 87 |
| 14 | 9.80933 | 9 | 9.92597 | 15 | 0.07403 | 9.88336 | 6 | 86 |
| 15 | 9.80942 | 9 | 9.92612 | 16 | 0.07388 | 9.88330 | 7 | 85 |
| 16 | 9.80951 | 9 | 9.92628 | 15 | 0.07372 | 9.88323 | 6 | 84 |
| 17 | 9.80960 | 9 | 9.92643 | 15 | 0.07357 | 9.88317 | 6 | 83 |
| 18 | 9.80969 | 9 | 9.92658 | 16 | 0.07342 | 9.88311 | 7 | 82 |
| 19 | 9.80978 | 9 | 9.92674 | 15 | 0.07326 | 9.88304 | 6 | 81 |
| 20 | 9.80987 | 9 | 9.92689 | 15 | 0.07311 | 9.88298 | 7 | 80 |
| 21 | 9.80996 | 9 | 9.92704 | 16 | 0.07296 | 9.88291 | 6 | 79 |
| 22 | 9.81005 | 9 | 9.92720 | 15 | 0.07280 | 9.88285 | 6 | 78 |
| 23 | 9.81014 | 9 | 9.92735 | 16 | 0.07265 | 9.88279 | 7 | 77 |
| 24 | 9.81023 | 9 | 9.92751 | 15 | 0.07249 | 9.88272 | 6 | 76 |
| 25 | 9.81032 | 9 | 9.92766 | 15 | 0.07234 | 9.88266 | 7 | 75 |
| 26 | 9.81041 | 8 | 9.92781 | 16 | 0.07219 | 9.88259 | 6 | 74 |
| 27 | 9.81049 | 9 | 9.92797 | 15 | 0.07203 | 9.88253 | 7 | 73 |
| 28 | 9.81058 | 9 | 9.92812 | 15 | 0.07188 | 9.88246 | 6 | 72 |
| 29 | 9.81067 | 9 | 9.92827 | 16 | 0.07173 | 9.88240 | 6 | 71 |
| 30 | 9.81076 | 9 | 9.92843 | 15 | 0.07157 | 9.88234 | 7 | 70 |
| 31 | 9.81085 | 9 | 9.92858 | 15 | 0.07142 | 9.88227 | 6 | 69 |
| 32 | 9.81094 | 9 | 9.92873 | 16 | 0.07127 | 9.88221 | 7 | 68 |
| 33 | 9.81103 | 9 | 9.92889 | 15 | 0.07111 | 9.88214 | 6 | 67 |
| 34 | 9.81112 | 9 | 9.92904 | 16 | 0.07096 | 9.88208 | 7 | 66 |
| 35 | 9.81121 | 9 | 9.92920 | 15 | 0.07080 | 9.88201 | 6 | 65 |
| 36 | 9.81130 | 9 | 9.92935 | 15 | 0.07065 | 9.88195 | 6 | 64 |
| 37 | 9.81139 | 9 | 9.92950 | 16 | 0.07050 | 9.88189 | 7 | 63 |
| 38 | 9.81148 | 9 | 9.92966 | 15 | 0.07034 | 9.88182 | 6 | 62 |
| 39 | 9.81157 | 9 | 9.92981 | 15 | 0.07019 | 9.88176 | 7 | 61 |
| 40 | 9.81166 | 8 | 9.92996 | 16 | 0.07004 | 9.88169 | 6 | 60 |
| 41 | 9.81174 | 9 | 9.93012 | 15 | 0.06988 | 9.88163 | 7 | 59 |
| 42 | 9.81183 | 9 | 9.93027 | 15 | 0.06973 | 9.88156 | 6 | 58 |
| 43 | 9.81192 | 9 | 9.93042 | 16 | 0.06958 | 9.88150 | 7 | 57 |
| 44 | 9.81201 | 9 | 9.93058 | 15 | 0.06942 | 9.88143 | 6 | 56 |
| 45 | 9.81210 | 9 | 9.93073 | 15 | 0.06927 | 9.88137 | 7 | 55 |
| 46 | 9.81219 | 9 | 9.93088 | 16 | 0.06912 | 9.88130 | 6 | 54 |
| 47 | 9.81228 | 9 | 9.93104 | 15 | 0.06896 | 9.88124 | 7 | 53 |
| 48 | 9.81237 | 9 | 9.93119 | 16 | 0.06881 | 9.88117 | 6 | 52 |
| 49 | 9.81246 | 8 | 9.93135 | 15 | 0.06865 | 9.88111 | 6 | 51 |
| 50 | 9.81254 | | 9.93150 | | 0.06850 | 9.88105 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 9 | 8 | 7 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 0.9 | 0.8 | 0.7 |
| 2 | 3.2 | 3.0 | 1.8 | 1.6 | 1.4 |
| 3 | 4.8 | 4.5 | 2.7 | 2.4 | 2.1 |
| 4 | 6.4 | 6.0 | 3.6 | 3.2 | 2.8 |
| 5 | 8.0 | 7.5 | 4.5 | 4.0 | 3.5 |
| 6 | 9.6 | 9.0 | 5.4 | 4.8 | 4.2 |
| 7 | 11.2 | 10.5 | 6.3 | 5.6 | 4.9 |
| 8 | 12.8 | 12.0 | 7.2 | 6.4 | 5.6 |
| 9 | 14.4 | 13.5 | 8.1 | 7.2 | 6.3 |

# 49°

| | Sin. | d. | Tang | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.81254 | 9 | 9.93150 | 15 | 0.06850 | 9.88105 | 7 | 50 |
| 51 | 9.81263 | 9 | 9.93165 | 16 | 0.06835 | 9.88098 | 6 | 49 |
| 52 | 9.81272 | 9 | 9.93181 | 15 | 0.06819 | 9.88092 | 7 | 48 |
| 53 | 9.81281 | 9 | 9.93196 | 15 | 0.06804 | 9.88085 | 6 | 47 |
| 54 | 9.81290 | 9 | 9.93211 | 16 | 0.06789 | 9.88079 | 7 | 46 |
| 55 | 9.81299 | 9 | 9.93227 | 15 | 0.06773 | 9.88072 | 6 | 45 |
| 56 | 9.81308 | 8 | 9.93242 | 15 | 0.06758 | 9.88066 | 7 | 44 |
| 57 | 9.81316 | 9 | 9.93257 | 16 | 0.06743 | 9.88059 | 6 | 43 |
| 58 | 9.81325 | 9 | 9.93273 | 15 | 0.06727 | 9.88053 | 7 | 42 |
| 59 | 9.81334 | 9 | 9.93288 | 15 | 0.06712 | 9.88046 | 6 | 41 |
| 60 | 9.81343 | 9 | 9.93303 | 16 | 0.06697 | 9.88040 | 7 | 40 |
| 61 | 9.81352 | 9 | 9.93319 | 15 | 0.06681 | 9.88033 | 6 | 39 |
| 62 | 9.81361 | 9 | 9.93334 | 15 | 0.06666 | 9.88027 | 7 | 38 |
| 63 | 9.81370 | 8 | 9.93349 | 16 | 0.06651 | 9.88020 | 6 | 37 |
| 64 | 9.81378 | 9 | 9.93365 | 15 | 0.06635 | 9.88014 | 7 | 36 |
| 65 | 9.81387 | 9 | 9.93380 | 15 | 0.06620 | 9.88007 | 6 | 35 |
| 66 | 9.81396 | 9 | 9.93395 | 16 | 0.06605 | 9.88001 | 7 | 34 |
| 67 | 9.81405 | 9 | 9.93411 | 15 | 0.06589 | 9.87994 | 6 | 33 |
| 68 | 9.81414 | 8 | 9.93426 | 15 | 0.06574 | 9.87988 | 7 | 32 |
| 69 | 9.81422 | 9 | 9.93441 | 16 | 0.06559 | 9.87981 | 6 | 31 |
| 70 | 9.81431 | 9 | 9.93457 | 15 | 0.06543 | 9.87975 | 7 | 30 |
| 71 | 9.81440 | 9 | 9.93472 | 15 | 0.06528 | 9.87968 | 6 | 29 |
| 72 | 9.81449 | 9 | 9.93487 | 16 | 0.06513 | 9.87962 | 7 | 28 |
| 73 | 9.81458 | 9 | 9.93503 | 15 | 0.06497 | 9.87955 | 6 | 27 |
| 74 | 9.81467 | 8 | 9.93518 | 15 | 0.06482 | 9.87949 | 7 | 26 |
| 75 | 9.81475 | 9 | 9.93533 | 16 | 0.06467 | 9.87942 | 7 | 25 |
| 76 | 9.81484 | 9 | 9.93549 | 15 | 0.06451 | 9.87935 | 6 | 24 |
| 77 | 9.81493 | 9 | 9.93564 | 15 | 0.06436 | 9.87929 | 7 | 23 |
| 78 | 9.81502 | 8 | 9.93579 | 16 | 0.06421 | 9.87922 | 6 | 22 |
| 79 | 9.81510 | 9 | 9.93595 | 15 | 0.06405 | 9.87916 | 7 | 21 |
| 80 | 9.81519 | 9 | 9.93610 | 15 | 0.06390 | 9.87909 | 6 | 20 |
| 81 | 9.81528 | 9 | 9.93625 | 16 | 0.06375 | 9.87903 | 7 | 19 |
| 82 | 9.81537 | 9 | 9.93641 | 15 | 0.06359 | 9.87896 | 6 | 18 |
| 83 | 9.81546 | 8 | 9.93656 | 15 | 0.06344 | 9.87890 | 7 | 17 |
| 84 | 9.81554 | 9 | 9.93671 | 16 | 0.06329 | 9.87883 | 6 | 16 |
| 85 | 9.81563 | 9 | 9.93687 | 15 | 0.06313 | 9.87877 | 7 | 15 |
| 86 | 9.81572 | 9 | 9.93702 | 15 | 0.06298 | 9.87870 | 7 | 14 |
| 87 | 9.81581 | 8 | 9.93717 | 16 | 0.06283 | 9.87863 | 6 | 13 |
| 88 | 9.81589 | 9 | 9.93733 | 15 | 0.06267 | 9.87857 | 7 | 12 |
| 89 | 9.81598 | 9 | 9.93748 | 15 | 0.06252 | 9.87850 | 6 | 11 |
| 90 | 9.81607 | 9 | 9.93763 | 15 | 0.06237 | 9.87844 | 7 | 10 |
| 91 | 9.81616 | 8 | 9.93778 | 16 | 0.06222 | 9.87837 | 6 | 09 |
| 92 | 9.81624 | 9 | 9.93794 | 15 | 0.06206 | 9.87831 | 7 | 08 |
| 93 | 9.81633 | 9 | 9.93809 | 15 | 0.06191 | 9.87824 | 7 | 07 |
| 94 | 9.81642 | 9 | 9.93824 | 16 | 0.06176 | 9.87817 | 6 | 06 |
| 95 | 9.81651 | 8 | 9.93840 | 15 | 0.06160 | 9.87811 | 7 | 05 |
| 96 | 9.81659 | 9 | 9.93855 | 15 | 0.06145 | 9.87804 | 6 | 04 |
| 97 | 9.81668 | 9 | 9.93870 | 16 | 0.06130 | 9.87798 | 7 | 03 |
| 98 | 9.81677 | 9 | 9.93886 | 15 | 0.06114 | 9.87791 | 6 | 02 |
| 99 | 9.81686 | 8 | 9.93901 | 15 | 0.06099 | 9.87785 | 7 | 01 |
| 100 | 9.81694 | | 9.93916 | | 0.06084 | 9.87778 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 8 | 7 | 6 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 0.8 | 0.7 | 0.6 |
| 2 | 3.2 | 3.0 | 1.6 | 1.4 | 1.2 |
| 3 | 4.8 | 4.5 | 2.4 | 2.1 | 1.8 |
| 4 | 6.4 | 6.0 | 3.2 | 2.8 | 2.4 |
| 5 | 8.0 | 7.5 | 4.0 | 3.5 | 3.0 |
| 6 | 9.6 | 9.0 | 4.8 | 4.2 | 3.6 |
| 7 | 11.2 | 10.5 | 5.6 | 4.9 | 4.2 |
| 8 | 12.8 | 12.0 | 6.4 | 5.6 | 4.8 |
| 9 | 14.4 | 13.5 | 7.2 | 6.3 | 5.4 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.81694 | 9 | 9.93916 | 16 | 0.06084 | 9.87778 | 7 | 100 |
| 01 | 9.81703 | 9 | 9.93932 | 15 | 0.06068 | 9.87771 | 6 | 99 |
| 02 | 9.81712 | 8 | 9.93947 | 15 | 0.06053 | 9.87765 | 7 | 98 |
| 03 | 9.81720 | 9 | 9.93962 | 16 | 0.06038 | 9.87758 | 6 | 97 |
| 04 | 9.81729 | 9 | 9.93978 | 15 | 0.06022 | 9.87752 | 7 | 96 |
| 05 | 9.81738 | 9 | 9.93993 | 15 | 0.06007 | 9.87745 | 7 | 95 |
| 06 | 9.81747 | 8 | 9.94008 | 15 | 0.05992 | 9.87738 | 6 | 94 |
| 07 | 9.81755 | 9 | 9.94023 | 16 | 0.05977 | 9.87732 | 7 | 93 |
| 08 | 9.81764 | 9 | 9.94039 | 15 | 0.05961 | 9.87725 | 6 | 92 |
| 09 | 9.81773 | 8 | 9.94054 | 15 | 0.05946 | 9.87719 | 7 | 91 |
| 10 | 9.81781 | 9 | 9.94069 | 16 | 0.05931 | 9.87712 | 7 | 90 |
| 11 | 9.81790 | 9 | 9.94085 | 15 | 0.05915 | 9.87705 | 6 | 89 |
| 12 | 9.81799 | 8 | 9.94100 | 15 | 0.05900 | 9.87699 | 7 | 88 |
| 13 | 9.81807 | 9 | 9.94115 | 16 | 0.05885 | 9.87692 | 6 | 87 |
| 14 | 9.81816 | 9 | 9.94131 | 15 | 0.05869 | 9.87686 | 7 | 86 |
| 15 | 9.81825 | 8 | 9.94146 | 15 | 0.05854 | 9.87679 | 7 | 85 |
| 16 | 9.81833 | 9 | 9.94161 | 15 | 0.05839 | 9.87672 | 6 | 84 |
| 17 | 9.81842 | 9 | 9.94176 | 16 | 0.05824 | 9.87666 | 7 | 83 |
| 18 | 9.81851 | 8 | 9.94192 | 15 | 0.05808 | 9.87659 | 7 | 82 |
| 19 | 9.81859 | 9 | 9.94207 | 15 | 0.05793 | 9.87652 | 6 | 81 |
| 20 | 9.81868 | 9 | 9.94222 | 16 | 0.05778 | 9.87646 | 7 | 80 |
| 21 | 9.81877 | 8 | 9.94238 | 15 | 0.05762 | 9.87639 | 7 | 79 |
| 22 | 9.81885 | 9 | 9.94253 | 15 | 0.05747 | 9.87632 | 6 | 78 |
| 23 | 9.81894 | 9 | 9.94268 | 16 | 0.05732 | 9.87626 | 7 | 77 |
| 24 | 9.81903 | 8 | 9.94284 | 15 | 0.05716 | 9.87619 | 6 | 76 |
| 25 | 9.81911 | 9 | 9.94299 | 15 | 0.05701 | 9.87613 | 7 | 75 |
| 26 | 9.81920 | 9 | 9.94314 | 15 | 0.05686 | 9.87606 | 7 | 74 |
| 27 | 9.81929 | 8 | 9.94329 | 16 | 0.05671 | 9.87599 | 6 | 73 |
| 28 | 9.81937 | 9 | 9.94345 | 15 | 0.05655 | 9.87593 | 7 | 72 |
| 29 | 9.81946 | 9 | 9.94360 | 15 | 0.05640 | 9.87586 | 7 | 71 |
| 30 | 9.81955 | 8 | 9.94375 | 16 | 0.05625 | 9.87579 | 6 | 70 |
| 31 | 9.81963 | 9 | 9.94391 | 15 | 0.05609 | 9.87573 | 7 | 69 |
| 32 | 9.81972 | 8 | 9.94406 | 15 | 0.05594 | 9.87566 | 7 | 68 |
| 33 | 9.81980 | 9 | 9.94421 | 15 | 0.05579 | 9.87559 | 6 | 67 |
| 34 | 9.81989 | 9 | 9.94436 | 16 | 0.05564 | 9.87553 | 7 | 66 |
| 35 | 9.81998 | 8 | 9.94452 | 15 | 0.05548 | 9.87546 | 7 | 65 |
| 36 | 9.82006 | 9 | 9.94467 | 15 | 0.05533 | 9.87539 | 6 | 64 |
| 37 | 9.82015 | 8 | 9.94482 | 16 | 0.05518 | 9.87533 | 7 | 63 |
| 38 | 9.82023 | 9 | 9.94498 | 15 | 0.05502 | 9.87526 | 7 | 62 |
| 39 | 9.82032 | 9 | 9.94513 | 15 | 0.05487 | 9.87519 | 6 | 61 |
| 40 | 9.82041 | 8 | 9.94528 | 15 | 0.05472 | 9.87513 | 7 | 60 |
| 41 | 9.82049 | 9 | 9.94543 | 16 | 0.05457 | 9.87506 | 7 | 59 |
| 42 | 9.82058 | 8 | 9.94559 | 15 | 0.05441 | 9.87499 | 7 | 58 |
| 43 | 9.82066 | 9 | 9.94574 | 15 | 0.05426 | 9.87492 | 6 | 57 |
| 44 | 9.82075 | 9 | 9.94589 | 15 | 0.05411 | 9.87486 | 7 | 56 |
| 45 | 9.82084 | 8 | 9.94604 | 16 | 0.05396 | 9.87479 | 7 | 55 |
| 46 | 9.82092 | 9 | 9.94620 | 15 | 0.05380 | 9.87472 | 6 | 54 |
| 47 | 9.82101 | 8 | 9.94635 | 15 | 0.05365 | 9.87466 | 7 | 53 |
| 48 | 9.82109 | 9 | 9.94650 | 16 | 0.05350 | 9.87459 | 7 | 52 |
| 49 | 9.82118 | 8 | 9.94666 | 15 | 0.05334 | 9.87452 | 6 | 51 |
| 50 | 9.82126 | | 9.94681 | | 0.05319 | 9.87446 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 9 | 8 | 7 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 0.9 | 0.8 | 0.7 |
| 2 | 3.2 | 3.0 | 1.8 | 1.6 | 1.4 |
| 3 | 4.8 | 4.5 | 2.7 | 2.4 | 2.1 |
| 4 | 6.4 | 6.0 | 3.6 | 3.2 | 2.8 |
| 5 | 8.0 | 7.5 | 4.5 | 4.0 | 3.5 |
| 6 | 9.6 | 9.0 | 5.4 | 4.8 | 4.2 |
| 7 | 11.2 | 10.5 | 6.3 | 5.6 | 4.9 |
| 8 | 12.8 | 12.0 | 7.2 | 6.4 | 5.6 |
| 9 | 14.4 | 13.5 | 8.1 | 7.2 | 6.3 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | | 
|---|---|---|---|---|---|---|---|---|
| 50 | 9.82126 | 9 | 9.94681 | 15 | 0.05319 | 9.87446 | 7 | 50 |
| 51 | 9.82135 | 9 | 9.94696 | 15 | 0.05304 | 9.87439 | 7 | 49 |
| 52 | 9.82144 | 8 | 9.94711 | 16 | 0.05289 | 9.87432 | 7 | 48 |
| 53 | 9.82152 | 9 | 9.94727 | 15 | 0.05273 | 9.87425 | 6 | 47 |
| 54 | 9.82161 | 8 | 9.94742 | 15 | 0.05258 | 9.87419 | 7 | 46 |
| 55 | 9.82169 | 9 | 9.94757 | 15 | 0.05243 | 9.87412 | 7 | 45 |
| 56 | 9.82178 | 8 | 9.94772 | 16 | 0.05228 | 9.87405 | 6 | 44 |
| 57 | 9.82186 | 9 | 9.94788 | 15 | 0.05212 | 9.87399 | 7 | 43 |
| 58 | 9.82195 | 8 | 9.94803 | 15 | 0.05197 | 9.87392 | 7 | 42 |
| 59 | 9.82203 | 9 | 9.94818 | 16 | 0.05182 | 9.87385 | 7 | 41 |
| 60 | 9.82212 | 9 | 9.94834 | 15 | 0.05166 | 9.87378 | 6 | 40 |
| 61 | 9.82221 | 8 | 9.94849 | 15 | 0.05151 | 9.87372 | 7 | 39 |
| 62 | 9.82229 | 9 | 9.94864 | 15 | 0.05136 | 9.87365 | 7 | 38 |
| 63 | 9.82238 | 8 | 9.94879 | 16 | 0.05121 | 9.87358 | 7 | 37 |
| 64 | 9.82246 | 9 | 9.94895 | 15 | 0.05105 | 9.87351 | 6 | 36 |
| 65 | 9.82255 | 8 | 9.94910 | 15 | 0.05090 | 9.87345 | 7 | 35 |
| 66 | 9.82263 | 9 | 9.94925 | 15 | 0.05075 | 9.87338 | 7 | 34 |
| 67 | 9.82272 | 8 | 9.94940 | 16 | 0.05060 | 9.87331 | 6 | 33 |
| 68 | 9.82280 | 9 | 9.94956 | 15 | 0.05044 | 9.87325 | 7 | 32 |
| 69 | 9.82289 | 8 | 9.94971 | 15 | 0.05029 | 9.87318 | 7 | 31 |
| 70 | 9.82297 | 9 | 9.94986 | 15 | 0.05014 | 9.87311 | 7 | 30 |
| 71 | 9.82306 | 8 | 9.95001 | 16 | 0.04999 | 9.87304 | 6 | 29 |
| 72 | 9.82314 | 9 | 9.95017 | 15 | 0.04983 | 9.87298 | 7 | 28 |
| 73 | 9.82323 | 8 | 9.95032 | 15 | 0.04968 | 9.87291 | 7 | 27 |
| 74 | 9.82331 | 9 | 9.95047 | 15 | 0.04953 | 9.87284 | 7 | 26 |
| 75 | 9.82340 | 8 | 9.95062 | 16 | 0.04938 | 9.87277 | 7 | 25 |
| 76 | 9.82348 | 9 | 9.95078 | 15 | 0.04922 | 9.87270 | 6 | 24 |
| 77 | 9.82357 | 8 | 9.95093 | 15 | 0.04907 | 9.87264 | 7 | 23 |
| 78 | 9.82365 | 9 | 9.95108 | 16 | 0.04892 | 9.87257 | 7 | 22 |
| 79 | 9.82374 | 8 | 9.95124 | 15 | 0.04876 | 9.87250 | 7 | 21 |
| 80 | 9.82382 | 9 | 9.95139 | 15 | 0.04861 | 9.87243 | 6 | 20 |
| 81 | 9.82391 | 8 | 9.95154 | 15 | 0.04846 | 9.87237 | 7 | 19 |
| 82 | 9.82399 | 9 | 9.95169 | 16 | 0.04831 | 9.87230 | 7 | 18 |
| 83 | 9.82408 | 8 | 9.95185 | 15 | 0.04815 | 9.87223 | 7 | 17 |
| 84 | 9.82416 | 8 | 9.95200 | 15 | 0.04800 | 9.87216 | 7 | 16 |
| 85 | 9.82424 | 9 | 9.95215 | 15 | 0.04785 | 9.87209 | 6 | 15 |
| 86 | 9.82433 | 8 | 9.95230 | 16 | 0.04770 | 9.87203 | 7 | 14 |
| 87 | 9.82441 | 9 | 9.95246 | 15 | 0.04754 | 9.87196 | 7 | 13 |
| 88 | 9.82450 | 8 | 9.95261 | 15 | 0.04739 | 9.87189 | 7 | 12 |
| 89 | 9.82458 | 9 | 9.95276 | 15 | 0.04724 | 9.87182 | 7 | 11 |
| 90 | 9.82467 | 8 | 9.95291 | 16 | 0.04709 | 9.87175 | 6 | 10 |
| 91 | 9.82475 | 9 | 9.95307 | 15 | 0.04693 | 9.87169 | 7 | 09 |
| 92 | 9.82484 | 8 | 9.95322 | 15 | 0.04678 | 9.87162 | 7 | 08 |
| 93 | 9.82492 | 9 | 9.95337 | 15 | 0.04663 | 9.87155 | 7 | 07 |
| 94 | 9.82501 | 8 | 9.95352 | 16 | 0.04648 | 9.87148 | 7 | 06 |
| 95 | 9.82509 | 8 | 9.95368 | 15 | 0.04632 | 9.87141 | 6 | 05 |
| 96 | 9.82517 | 9 | 9.95383 | 15 | 0.04617 | 9.87135 | 7 | 04 |
| 97 | 9.82526 | 8 | 9.95398 | 15 | 0.04602 | 9.87128 | 7 | 03 |
| 98 | 9.82534 | 9 | 9.95413 | 16 | 0.04587 | 9.87121 | 7 | 02 |
| 99 | 9.82543 | 8 | 9.95429 | 15 | 0.04571 | 9.87114 | 7 | 01 |
| 100 | 9.82551 | | 9.95444 | | 0.04556 | 9.87107 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang | Sin. | d. | |

P. P.

| 16 | |
|---|---|
| 1 | 1.6 |
| 2 | 3.2 |
| 3 | 4.8 |
| 4 | 6.4 |
| 5 | 8.0 |
| 6 | 9.6 |
| 7 | 11.2 |
| 8 | 12.8 |
| 9 | 14.4 |

| 15 | |
|---|---|
| 1 | 1.5 |
| 2 | 3.0 |
| 3 | 4.5 |
| 4 | 6.0 |
| 5 | 7.5 |
| 6 | 9.0 |
| 7 | 10.5 |
| 8 | 12.0 |
| 9 | 13.5 |

| 8 | |
|---|---|
| 1 | 0.8 |
| 2 | 1.6 |
| 3 | 2.4 |
| 4 | 3.2 |
| 5 | 4.0 |
| 6 | 4.8 |
| 7 | 5.6 |
| 8 | 6.4 |
| 9 | 7.2 |

| 7 | |
|---|---|
| 1 | 0.7 |
| 2 | 1.4 |
| 3 | 2.1 |
| 4 | 2.8 |
| 5 | 3.5 |
| 6 | 4.2 |
| 7 | 4.9 |
| 8 | 5.6 |
| 9 | 6.3 |

| 6 | |
|---|---|
| 1 | 0.6 |
| 2 | 1.2 |
| 3 | 1.8 |
| 4 | 2.4 |
| 5 | 3.0 |
| 6 | 3.6 |
| 7 | 4.2 |
| 8 | 4.8 |
| 9 | 5.4 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.82551 | 9 | 9.95444 | 15 | 0.04556 | 9.87107 | 6 | 100 |
| 01 | 9.82560 | 8 | 9.95459 | 15 | 0.04541 | 9.87101 | 7 | 99 |
| 02 | 9.82568 | 8 | 9.95474 | 15 | 0.04526 | 9.87094 | 7 | 98 |
| 03 | 9.82576 | 9 | 9.95489 | 16 | 0.04511 | 9.87087 | 7 | 97 |
| 04 | 9.82585 | 8 | 9.95505 | 15 | 0.04495 | 9.87080 | 7 | 96 |
| 05 | 9.82593 | 9 | 9.95520 | 15 | 0.04480 | 9.87073 | 7 | 95 |
| 06 | 9.82602 | 8 | 9.95535 | 15 | 0.04465 | 9.87066 | 6 | 94 |
| 07 | 9.82610 | 8 | 9.95550 | 16 | 0.04450 | 9.87060 | 7 | 93 |
| 08 | 9.82618 | 9 | 9.95566 | 15 | 0.04434 | 9.87053 | 7 | 92 |
| 09 | 9.82627 | 8 | 9.95581 | 15 | 0.04419 | 9.87046 | 7 | 91 |
| 10 | 9.82635 | 9 | 9.95596 | 15 | 0.04404 | 9.87039 | 7 | 90 |
| 11 | 9.82644 | 8 | 9.95611 | 16 | 0.04389 | 9.87032 | 7 | 89 |
| 12 | 9.82652 | 8 | 9.95627 | 15 | 0.04373 | 9.87c25 | 7 | 88 |
| 13 | 9.82660 | 9 | 9.95642 | 15 | 0.04358 | 9.87018 | 6 | 87 |
| 14 | 9.82669 | 8 | 9.95657 | 15 | 0.04343 | 9.87012 | 7 | 86 |
| 15 | 9.82677 | 8 | 9.95672 | 16 | 0.04328 | 9.87005 | 7 | 85 |
| 16 | 9.82685 | 9 | 9.95688 | 15 | 0.04312 | 9.86998 | 7 | 84 |
| 17 | 9.82694 | 8 | 9.95703 | 15 | 0.04297 | 9.86991 | 7 | 83 |
| 18 | 9.82702 | 9 | 9.95718 | 15 | 0.04282 | 9.86984 | 7 | 82 |
| 19 | 9.82711 | 8 | 9.95733 | 15 | 0.04267 | 9.86977 | 7 | 81 |
| 20 | 9.82719 | 8 | 9.95748 | 16 | 0.04252 | 9.86970 | 7 | 80 |
| 21 | 9.82727 | 9 | 9.95764 | 15 | 0.04236 | 9.86963 | 6 | 79 |
| 22 | 9.82736 | 8 | 9.95779 | 15 | 0.04221 | 9.86957 | 7 | 78 |
| 23 | 9.82744 | 8 | 9.95794 | 15 | 0.04206 | 9.86950 | 7 | 77 |
| 24 | 9.82752 | 9 | 9.95809 | 16 | 0.04191 | 9.86943 | 7 | 76 |
| 25 | 9.82761 | 8 | 9.95825 | 15 | 0.04175 | 9.86936 | 7 | 75 |
| 26 | 9.82769 | 8 | 9.95840 | 15 | 0.04160 | 9.86929 | 7 | 74 |
| 27 | 9.82777 | 9 | 9.95855 | 15 | 0.04145 | 9.86922 | 7 | 73 |
| 28 | 9.82786 | 8 | 9.95870 | 16 | 0.04130 | 9.86915 | 7 | 72 |
| 29 | 9.82794 | 8 | 9.95886 | 15 | 0.04114 | 9.86908 | 6 | 71 |
| 30 | 9.82802 | 9 | 9.95901 | 15 | 0.04099 | 9.86902 | 7 | 70 |
| 31 | 9.82811 | 8 | 9.95916 | 15 | 0.04084 | 9.86895 | 7 | 69 |
| 32 | 9.82819 | 8 | 9.95931 | 15 | 0.04069 | 9.86888 | 7 | 68 |
| 33 | 9.82827 | 9 | 9.95946 | 16 | 0.04054 | 9.86881 | 7 | 67 |
| 34 | 9.82836 | 8 | 9.95962 | 15 | 0.04038 | 9.86874 | 7 | 66 |
| 35 | 9 82844 | 8 | 9.95977 | 15 | 0.04023 | 9.86867 | 7 | 65 |
| 36 | 9.82852 | 9 | 9.95992 | 15 | 0.04008 | 9.86860 | 7 | 64 |
| 37 | 9.82861 | 8 | 9.96007 | 16 | 0.03993 | 9.86853 | 7 | 63 |
| 38 | 9.82869 | 8 | 9.96023 | 15 | 0.03977 | 9.86846 | 7 | 62 |
| 39 | 9.82877 | 8 | 9.96038 | 15 | 0.03962 | 9.86839 | 7 | 61 |
| 40 | 9.82885 | 9 | 9.96053 | 15 | 0.03947 | 9.86832 | 6 | 60 |
| 41 | 9.82894 | 8 | 9.96068 | 15 | 0.03932 | 9.86826 | 7 | 59 |
| 42 | 9.82902 | 8 | 9.96083 | 16 | 0.03917 | 9.86819 | 7 | 58 |
| 43 | 9.82910 | 9 | 9.96099 | 15 | 0.03901 | 9.86812 | 7 | 57 |
| 44 | 9.82919 | 8 | 9.96114 | 15 | 0.03886 | 9.86805 | 7 | 56 |
| 45 | 9.82927 | 8 | 9.96129 | 15 | 0.03871 | 9.86798 | 7 | 55 |
| 46 | 9.82935 | 9 | 9.96144 | 16 | 0.03856 | 9.86791 | 7 | 54 |
| 47 | 9.82944 | 8 | 9.96160 | 15 | 0.03840 | 9.86784 | 7 | 53 |
| 48 | 9.82952 | 8 | 9.96175 | 15 | 0.03825 | 9.86777 | 7 | 52 |
| 49 | 9.82960 | 8 | 9.96190 | 15 | 0.03810 | 9.86770 | 7 | 51 |
| 50 | 9.82968 | | 9.96205 | | 0.03795 | 9.86763 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 |
|---|---|
| 1 | 1.6 |
| 2 | 3.2 |
| 3 | 4.8 |
| 4 | 6.4 |
| 5 | 8.0 |
| 6 | 9.6 |
| 7 | 11.2 |
| 8 | 12.8 |
| 9 | 14.4 |

| | 15 |
|---|---|
| 1 | 1.5 |
| 2 | 3.0 |
| 3 | 4.5 |
| 4 | 6.0 |
| 5 | 7.5 |
| 6 | 9.0 |
| 7 | 10.5 |
| 8 | 12.0 |
| 9 | 13.5 |

*

| | 9 |
|---|---|
| 1 | 0.9 |
| 2 | 1.8 |
| 3 | 2.7 |
| 4 | 3.6 |
| 5 | 4.5 |
| 6 | 5.4 |
| 7 | 6.3 |
| 8 | 7.2 |
| 9 | 8.1 |

| | 8 |
|---|---|
| 1 | 0.8 |
| 2 | 1.6 |
| 3 | 2.4 |
| 4 | 3.2 |
| 5 | 4.0 |
| 6 | 4.8 |
| 7 | 5.6 |
| 8 | 6.4 |
| 9 | 7.2 |

*

| | 7 |
|---|---|
| 1 | 0.7 |
| 2 | 1.4 |
| 3 | 2.1 |
| 4 | 2.8 |
| 5 | 3.5 |
| 6 | 4.2 |
| 7 | 4.9 |
| 8 | 5.6 |
| 9 | 6.3 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.82968 | 9 | 9.96205 | 15 | 0.03795 | 9.86763 | 7 | 50 |
| 51 | 9.82977 | 8 | 9.96220 | 16 | 0.03780 | 9.86756 | 7 | 49 |
| 52 | 9.82985 | 8 | 9.96236 | 15 | 0.03764 | 9.86749 | 7 | 48 |
| 53 | 9.82993 | 8 | 9.96251 | 15 | 0.03749 | 9.86742 | 7 | 47 |
| 54 | 9.83001 | 9 | 9.96266 | 15 | 0.03734 | 9.86735 | 7 | 46 |
| 55 | 9.83010 | 8 | 9.96281 | 16 | 0.03719 | 9.86728 | 7 | 45 |
| 56 | 9.83018 | 8 | 9.96297 | 15 | 0.03703 | 9.86721 | 7 | 44 |
| 57 | 9.83026 | 8 | 9.96312 | 15 | 0.03688 | 9.86714 | 7 | 43 |
| 58 | 9.83034 | 9 | 9.96327 | 15 | 0.03673 | 9.86707 | 7 | 42 |
| 59 | 9.83043 | 8 | 9.96342 | 15 | 0.03658 | 9.86700 | 6 | 41 |
| 60 | 9.83051 | 8 | 9.96357 | 16 | 0.03643 | 9.86694 | 7 | 40 |
| 61 | 9.83059 | 8 | 9.96373 | 15 | 0.03627 | 9.86687 | 7 | 39 |
| 62 | 9.83067 | 9 | 9.96388 | 15 | 0.03612 | 9.86680 | 7 | 38 |
| 63 | 9.83076 | 8 | 9.96403 | 15 | 0.03597 | 9.86673 | 7 | 37 |
| 64 | 9.83084 | 8 | 9.96418 | 15 | 0.03582 | 9.86666 | 7 | 36 |
| 65 | 9.83092 | 8 | 9.96433 | 16 | 0.03567 | 9.86659 | 7 | 35 |
| 66 | 9.83100 | 9 | 9.96449 | 15 | 0.03551 | 9.86652 | 7 | 34 |
| 67 | 9.83109 | 8 | 9.96464 | 15 | 0.03536 | 9.86645 | 7 | 33 |
| 68 | 9.83117 | 8 | 9.96479 | 15 | 0.03521 | 9.86638 | 7 | 32 |
| 69 | 9.83125 | 8 | 9.96494 | 16 | 0.03506 | 9.86631 | 7 | 31 |
| 70 | 9.83133 | 8 | 9.96510 | 15 | 0.03490 | 9.86624 | 7 | 30 |
| 71 | 9.83141 | 9 | 9.96525 | 15 | 0.03475 | 9.86617 | 7 | 29 |
| 72 | 9.83150 | 8 | 9.96540 | 15 | 0.03460 | 9.86610 | 7 | 28 |
| 73 | 9.83158 | 8 | 9.96555 | 15 | 0.03445 | 9.86603 | 7 | 27 |
| 74 | 9.83166 | 8 | 9.96570 | 16 | 0.03430 | 9.86596 | 7 | 26 |
| 75 | 9.83174 | 8 | 9.96586 | 15 | 0.03414 | 9.86589 | 7 | 25 |
| 76 | 9.83182 | 9 | 9.96601 | 15 | 0.03399 | 9.86582 | 7 | 24 |
| 77 | 9.83191 | 8 | 9.96616 | 15 | 0.03384 | 9.86575 | 7 | 23 |
| 78 | 9.83199 | 8 | 9.96631 | 15 | 0.03369 | 9.86568 | 7 | 22 |
| 79 | 9.83207 | 8 | 9.96646 | 16 | 0.03354 | 9.86561 | 7 | 21 |
| 80 | 9.83215 | 8 | 9.96662 | 15 | 0.03338 | 9.86554 | 7 | 20 |
| 81 | 9.83223 | 9 | 9.96677 | 15 | 0.03323 | 9.86547 | 7 | 19 |
| 82 | 9.83232 | 8 | 9.96692 | 15 | 0.03308 | 9.86540 | 7 | 18 |
| 83 | 9.83240 | 8 | 9.96707 | 15 | 0.03293 | 9.86533 | 7 | 17 |
| 84 | 9.83248 | 8 | 9.96722 | 16 | 0.03278 | 9.86526 | 8 | 16 |
| 85 | 9.83256 | 8 | 9.96738 | 15 | 0.03262 | 9.86518 | 7 | 15 |
| 86 | 9.83264 | 8 | 9.96753 | 15 | 0.03247 | 9.86511 | 7 | 14 |
| 87 | 9.83272 | 9 | 9.96768 | 15 | 0.03232 | 9.86504 | 7 | 13 |
| 88 | 9.83281 | 8 | 9.96783 | 15 | 0.03217 | 9.86497 | 7 | 12 |
| 89 | 9.83289 | 8 | 9.96798 | 16 | 0.03202 | 9.86490 | 7 | 11 |
| 90 | 9.83297 | 8 | 9.96814 | 15 | 0.03186 | 9.86483 | 7 | 10 |
| 91 | 9.83305 | 8 | 9.96829 | 15 | 0.03171 | 9.86476 | 7 | 09 |
| 92 | 9.83313 | 8 | 9.96844 | 15 | 0.03156 | 9.86469 | 7 | 08 |
| 93 | 9.83321 | 9 | 9.96859 | 15 | 0.03141 | 9.86462 | 7 | 07 |
| 94 | 9.83330 | 8 | 9.96874 | 16 | 0.03126 | 9.86455 | 7 | 06 |
| 95 | 9.83338 | 8 | 9.96890 | 15 | 0.03110 | 9.86448 | 7 | 05 |
| 96 | 9.83346 | 8 | 9.96905 | 15 | 0.03095 | 9.86441 | 7 | 04 |
| 97 | 9.83354 | 8 | 9.96920 | 15 | 0.0308c | 9.86434 | 7 | 03 |
| 98 | 9.83362 | 8 | 9.96935 | 15 | 0.03065 | 9.86427 | 7 | 02 |
| 99 | 9.83370 | 8 | 9.96950 | 16 | 0.03050 | 9.86420 | 7 | 01 |
| 100 | 9.83378 | | 9.96966 | | 0.03034 | 9.86413 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 9 | 8 | 7 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 0.9 | 0.8 | 0.7 |
| 2 | 3.2 | 3.0 | 1.8 | 1.6 | 1.4 |
| 3 | 4.8 | 4.5 | 2.7 | 2.4 | 2.1 |
| 4 | 6.4 | 6.0 | 3.6 | 3.2 | 2.8 |
| 5 | 8.0 | 7.5 | 4.5 | 4.0 | 3.5 |
| 6 | 9.6 | 9.0 | 5.4 | 4.8 | 4.2 |
| 7 | 11.2 | 10.5 | 6.3 | 5.6 | 4.9 |
| 8 | 12.8 | 12.0 | 7.2 | 6.4 | 5.6 |
| 9 | 14.4 | 13.5 | 8.1 | 7.2 | 6.3 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.83378 | 8 | 9.96966 | 15 | 0.03034 | 9.86413 | 7 | 100 |
| 01 | 9.83386 | 9 | 9.96981 | 15 | 0.03019 | 9.86406 | 7 | 99 |
| 02 | 9.83395 | 8 | 9.96996 | 15 | 0.03004 | 9.86399 | 7 | 98 |
| 03 | 9.83403 | 8 | 9.97011 | 15 | 0.02989 | 9.86392 | 8 | 97 |
| 04 | 9.83411 | 8 | 9.97026 | 16 | 0.02974 | 9.86384 | 7 | 96 |
| 05 | 9.83419 | 8 | 9.97042 | 15 | 0.02958 | 9.86377 | 7 | 95 |
| 06 | 9.83427 | 8 | 9.97057 | 15 | 0.02943 | 9.86370 | 7 | 94 |
| 07 | 9.83435 | 8 | 9.97072 | 15 | 0.02928 | 9.86363 | 7 | 93 |
| 08 | 9.83443 | 8 | 9.97087 | 15 | 0.02913 | 9.86356 | 7 | 92 |
| 09 | 9.83451 | 8 | 9.97102 | 16 | 0.02898 | 9.86349 | 7 | 91 |
| 10 | 9.83459 | 9 | 9.97118 | 15 | 0.02882 | 9.86342 | 7 | 90 |
| 11 | 9.83468 | 8 | 9.97133 | 15 | 0.02867 | 9.86335 | 7 | 89 |
| 12 | 9.83476 | 8 | 9.97148 | 15 | 0.02852 | 9.86328 | 7 | 88 |
| 13 | 9.83484 | 8 | 9.97163 | 15 | 0.02837 | 9.86321 | 7 | 87 |
| 14 | 9.83492 | 8 | 9.97178 | 15 | 0.02822 | 9.86314 | 8 | 86 |
| 15 | 9.83500 | 8 | 9.97193 | 16 | 0.02807 | 9.86306 | 7 | 85 |
| 16 | 9.83508 | 8 | 9.97209 | 15 | 0.02791 | 9.86299 | 7 | 84 |
| 17 | 9.83516 | 8 | 9.97224 | 15 | 0.02776 | 9.86292 | 7 | 83 |
| 18 | 9.83524 | 8 | 9.97239 | 15 | 0.02761 | 9.86285 | 7 | 82 |
| 19 | 9.83532 | 8 | 9.97254 | 15 | 0.02746 | 9.86278 | 7 | 81 |
| 20 | 9.83540 | 8 | 9.97269 | 16 | 0.02731 | 9.86271 | 7 | 80 |
| 21 | 9.83548 | 8 | 9.97285 | 15 | 0.02715 | 9.86264 | 7 | 79 |
| 22 | 9.83556 | 9 | 9.97300 | 15 | 0.02700 | 9.86257 | 7 | 78 |
| 23 | 9.83565 | 8 | 9.97315 | 15 | 0.02685 | 9.86250 | 8 | 77 |
| 24 | 9.83573 | 8 | 9.97330 | 15 | 0.02670 | 9.86242 | 7 | 76 |
| 25 | 9.83581 | 8 | 9.97345 | 16 | 0.02655 | 9.86235 | 7 | 75 |
| 26 | 9.83589 | 8 | 9.97361 | 15 | 0.02639 | 9.86228 | 7 | 74 |
| 27 | 9.83597 | 8 | 9.97376 | 15 | 0.02624 | 9.86221 | 7 | 73 |
| 28 | 9.83605 | 8 | 9.97391 | 15 | 0.02609 | 9.86214 | 7 | 72 |
| 29 | 9.83613 | 8 | 9.97406 | 15 | 0.02594 | 9.86207 | 7 | 71 |
| 30 | 9.83621 | 8 | 9.97421 | 16 | 0.02579 | 9.86200 | 8 | 70 |
| 31 | 9.83629 | 8 | 9.97437 | 15 | 0.02563 | 9.86192 | 7 | 69 |
| 32 | 9.83637 | 8 | 9.97452 | 15 | 0.02548 | 9.86185 | 7 | 68 |
| 33 | 9.83645 | 8 | 9.97467 | 15 | 0.02533 | 9.86178 | 7 | 67 |
| 34 | 9.83653 | 8 | 9.97482 | 15 | 0.02518 | 9.86171 | 7 | 66 |
| 35 | 9.83661 | 8 | 9.97497 | 15 | 0.02503 | 9.86164 | 7 | 65 |
| 36 | 9.83669 | 8 | 9.97512 | 16 | 0.02488 | 9.86157 | 7 | 64 |
| 37 | 9.83677 | 8 | 9.97528 | 15 | 0.02472 | 9.86150 | 8 | 63 |
| 38 | 9.83685 | 8 | 9.97543 | 15 | 0.02457 | 9.86142 | 7 | 62 |
| 39 | 9.83693 | 8 | 9.97558 | 15 | 0.02442 | 9.86135 | 7 | 61 |
| 40 | 9.83701 | 8 | 9.97573 | 15 | 0.02427 | 9.86128 | 7 | 60 |
| 41 | 9.83709 | 8 | 9.97588 | 16 | 0.02412 | 9.86121 | 7 | 59 |
| 42 | 9.83717 | 8 | 9.97604 | 15 | 0.02396 | 9.86114 | 7 | 58 |
| 43 | 9.83725 | 8 | 9.97619 | 15 | 0.02381 | 9.86107 | 8 | 57 |
| 44 | 9.83733 | 8 | 9.97634 | 15 | 0.02366 | 9.86099 | 7 | 56 |
| 45 | 9.83741 | 8 | 9.97649 | 15 | 0.02351 | 9.86092 | 7 | 55 |
| 46 | 9.83749 | 8 | 9.97664 | 15 | 0.02336 | 9.86085 | 7 | 54 |
| 47 | 9.83757 | 8 | 9.97679 | 16 | 0.02321 | 9.86078 | 7 | 53 |
| 48 | 9.83765 | 8 | 9.97695 | 15 | 0.02305 | 9.86071 | 8 | 52 |
| 49 | 9.83773 | 8 | 9.97710 | 15 | 0.02290 | 9.86063 | 7 | 51 |
| 50 | 9.83781 | | 9.97725 | | 0.02275 | 9.86056 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 9 | 8 | 7 |
|---|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 0.9 | 0.8 | 0.7 |
| 2 | 3.2 | 3.0 | 1.8 | 1.6 | 1.4 |
| 3 | 4.8 | 4.5 | 2.7 | 2.4 | 2.1 |
| 4 | 6.4 | 6.0 | 3.6 | 3.2 | 2.8 |
| 5 | 8.0 | 7.5 | 4.5 | 4.0 | 3.5 |
| 6 | 9.6 | 9.0 | 5.4 | 4.8 | 4.2 |
| 7 | 11.2 | 10.5 | 6.3 | 5.6 | 4.9 |
| 8 | 12.8 | 12.0 | 7.2 | 6.4 | 5.6 |
| 9 | 14.4 | 13.5 | 8.1 | 7.2 | 6.3 |

P. P.

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.83781 | 8 | 9.97725 | 15 | 0.02275 | 9.86056 | 7 | 50 |
| 51 | 9.83789 | 8 | 9.97740 | 15 | 0.02260 | 9.86049 | 7 | 49 |
| 52 | 9.83797 | 8 | 9.97755 | 16 | 0.02245 | 9.86042 | 7 | 48 |
| 53 | 9.83805 | 8 | 9.97771 | 15 | 0.02229 | 9.86035 | 8 | 47 |
| 54 | 9.83813 | 8 | 9.97786 | 15 | 0.02214 | 9.86027 | 7 | 46 |
| 55 | 9.83821 | 8 | 9.97801 | 15 | 0.02199 | 9.86020 | 7 | 45 |
| 56 | 9.83829 | 8 | 9.97816 | 15 | 0.02184 | 9.86013 | 7 | 44 |
| 57 | 9.83837 | 8 | 9.97831 | 15 | 0.02169 | 9.86006 | 7 | 43 |
| 58 | 9.83845 | 8 | 9.97846 | 16 | 0.02154 | 9.85999 | 8 | 42 |
| 59 | 9.83853 | 8 | 9.97862 | 15 | 0.02138 | 9.85991 | 7 | 41 |
| 60 | 9.83861 | 8 | 9.97877 | 15 | 0.02123 | 9.85984 | 7 | 40 |
| 61 | 9.83869 | 8 | 9.97892 | 15 | 0.02108 | 9.85977 | 7 | 39 |
| 62 | 9.83877 | 8 | 9.97907 | 15 | 0.02093 | 9.85970 | 8 | 38 |
| 63 | 9.83885 | 8 | 9.97922 | 16 | 0.02078 | 9.85962 | 7 | 37 |
| 64 | 9.83893 | 8 | 9.97938 | 15 | 0.02062 | 9.85955 | 7 | 36 |
| 65 | 9.83901 | 8 | 9.97953 | 15 | 0.02047 | 9.85948 | 7 | 35 |
| 66 | 9.83909 | 8 | 9.97968 | 15 | 0.02032 | 9.85941 | 7 | 34 |
| 67 | 9.83917 | 8 | 9.97983 | 15 | 0.02017 | 9.85934 | 8 | 33 |
| 68 | 9.83925 | 7 | 9.97998 | 15 | 0.02002 | 9.85926 | 7 | 32 |
| 69 | 9.83932 | 8 | 9.98013 | 16 | 0.01987 | 9.85919 | 7 | 31 |
| 70 | 9.83940 | 8 | 9.98029 | 15 | 0.01971 | 9.85912 | 7 | 30 |
| 71 | 9.83948 | 8 | 9.98044 | 15 | 0.01956 | 9.85905 | 8 | 29 |
| 72 | 9.83956 | 8 | 9.98059 | 15 | 0.01941 | 9.85897 | 7 | 28 |
| 73 | 9.83964 | 8 | 9.98074 | 15 | 0.01926 | 9.85890 | 7 | 27 |
| 74 | 9.83972 | 8 | 9.98089 | 15 | 0.01911 | 9.85883 | 7 | 26 |
| 75 | 9.83980 | 8 | 9.98104 | 16 | 0.01896 | 9.85876 | 8 | 25 |
| 76 | 9.83988 | 8 | 9.98120 | 15 | 0.01880 | 9.85868 | 7 | 24 |
| 77 | 9.83996 | 8 | 9.98135 | 15 | 0.01865 | 9.85861 | 7 | 23 |
| 78 | 9.84004 | 8 | 9.98150 | 15 | 0.01850 | 9.85854 | 7 | 22 |
| 79 | 9.84012 | 8 | 9.98165 | 15 | 0.01835 | 9.85847 | 8 | 21 |
| 80 | 9.84020 | 7 | 9.98180 | 15 | 0.01820 | 9.85839 | 7 | 20 |
| 81 | 9.84027 | 8 | 9.98195 | 16 | 0.01805 | 9.85832 | 7 | 19 |
| 82 | 9.84035 | 8 | 9.98211 | 15 | 0.01789 | 9.85825 | 8 | 18 |
| 83 | 9.84043 | 8 | 9.98226 | 15 | 0.01774 | 9.85817 | 7 | 17 |
| 84 | 9.84051 | 8 | 9.98241 | 15 | 0.01759 | 9.85810 | 7 | 16 |
| 85 | 9.84059 | 8 | 9.98256 | 15 | 0.01744 | 9.85803 | 7 | 15 |
| 86 | 9.84067 | 8 | 9.98271 | 16 | 0.01729 | 9.85796 | 8 | 14 |
| 87 | 9.84075 | 8 | 9.98287 | 15 | 0.01713 | 9.85788 | 7 | 13 |
| 88 | 9.84083 | 8 | 9.98302 | 15 | 0.01698 | 9.85781 | 7 | 12 |
| 89 | 9.84091 | 7 | 9.98317 | 15 | 0.01683 | 9.85774 | 8 | 11 |
| 90 | 9.84098 | 8 | 9.98332 | 15 | 0.01668 | 9.85766 | 7 | 10 |
| 91 | 9.84106 | 8 | 9.98347 | 15 | 0.01653 | 9.85759 | 7 | 09 |
| 92 | 9.84114 | 8 | 9.98362 | 16 | 0.01638 | 9.85752 | 7 | 08 |
| 93 | 9.84122 | 8 | 9.98378 | 15 | 0.01622 | 9.85745 | 8 | 07 |
| 94 | 9.84130 | 8 | 9.98393 | 15 | 0.01607 | 9.85737 | 7 | 06 |
| 95 | 9.84138 | 8 | 9.98408 | 15 | 0.01592 | 9.85730 | 7 | 05 |
| 96 | 9.84146 | 8 | 9.98423 | 15 | 0.01577 | 9.85723 | 8 | 04 |
| 97 | 9.84154 | 7 | 9.98438 | 15 | 0.01562 | 9.85715 | 7 | 03 |
| 98 | 9.84161 | 8 | 9.98453 | 16 | 0.01547 | 9.85708 | 7 | 02 |
| 99 | 9.84169 | 8 | 9.98469 | 15 | 0.01531 | 9.85701 | 8 | 01 |
| 100 | 9.84177 | | 9.98484 | | 0.01516 | 9.85693 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 8 | 7 |
|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 0.8 | 0.7 |
| 2 | 3.2 | 3.0 | 1.6 | 1.4 |
| 3 | 4.8 | 4.5 | 2.4 | 2.1 |
| 4 | 6.4 | 6.0 | 3.2 | 2.8 |
| 5 | 8.0 | 7.5 | 4.0 | 3.5 |
| 6 | 9.6 | 9.0 | 4.8 | 4.2 |
| 7 | 11.2 | 10.5 | 5.6 | 4.9 |
| 8 | 12.8 | 12.0 | 6.4 | 5.6 |
| 9 | 14.4 | 13.5 | 7.2 | 6.3 |

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 00 | 9.84177 | 8 | 9.98484 | 15 | 0.01516 | 9.85693 | 7 | 100 |
| 01 | 9.84185 | 8 | 9.98499 | 15 | 0.01501 | 9.85686 | 7 | 99 |
| 02 | 9.84193 | 8 | 9.98514 | 15 | 0.01486 | 9.85679 | 8 | 98 |
| 03 | 9.84201 | 8 | 9.98529 | 15 | 0.01471 | 9.85671 | 7 | 97 |
| 04 | 9.84209 | 7 | 9.98544 | 16 | 0.01456 | 9.85664 | 7 | 96 |
| 05 | 9.84216 | 8 | 9.98560 | 15 | 0.01440 | 9.85657 | 8 | 95 |
| 06 | 9.84224 | 8 | 9.98575 | 15 | 0.01425 | 9.85649 | 7 | 94 |
| 07 | 9.84232 | 8 | 9.98590 | 15 | 0.01410 | 9.85642 | 7 | 93 |
| 08 | 9.84240 | 8 | 9.98605 | 15 | 0.01395 | 9.85635 | 8 | 92 |
| 09 | 9.84248 | 7 | 9.98620 | 15 | 0.01380 | 9.85627 | 7 | 91 |
| 10 | 9.84255 | 8 | 9.98635 | 16 | 0.01365 | 9.85620 | 7 | 90 |
| 11 | 9.84263 | 8 | 9.98651 | 15 | 0.01349 | 9.85613 | 8 | 89 |
| 12 | 9.84271 | 8 | 9.98666 | 15 | 0.01334 | 9.85605 | 7 | 88 |
| 13 | 9.84279 | 8 | 9.98681 | 15 | 0.01319 | 9.85598 | 7 | 87 |
| 14 | 9.84287 | 8 | 9.98696 | 15 | 0.01304 | 9.85591 | 8 | 86 |
| 15 | 9.84295 | 7 | 9.98711 | 15 | 0.01289 | 9.85583 | 7 | 85 |
| 16 | 9.84302 | 8 | 9.98726 | 16 | 0.01274 | 9.85576 | 7 | 84 |
| 17 | 9.84310 | 8 | 9.98742 | 15 | 0.01258 | 9.85569 | 8 | 83 |
| 18 | 9.84318 | 8 | 9.98757 | 15 | 0.01243 | 9.85561 | 7 | 82 |
| 19 | 9.84326 | 8 | 9.98772 | 15 | 0.01228 | 9.85554 | 7 | 81 |
| 20 | 9.84334 | 7 | 9.98787 | 15 | 0.01213 | 9.85547 | 8 | 80 |
| 21 | 9.84341 | 8 | 9.98802 | 15 | 0.01198 | 9.85539 | 7 | 79 |
| 22 | 9.84349 | 8 | 9.98817 | 16 | 0.01183 | 9.85532 | 8 | 78 |
| 23 | 9.84357 | 8 | 9.98833 | 15 | 0.01167 | 9.85524 | 7 | 77 |
| 24 | 9.84365 | 8 | 9.98848 | 15 | 0.01152 | 9.85517 | 7 | 76 |
| 25 | 9.84373 | 7 | 9.98863 | 15 | 0.01137 | 9.85510 | 8 | 75 |
| 26 | 9.84380 | 8 | 9.98878 | 15 | 0.01122 | 9.85502 | 7 | 74 |
| 27 | 9.84388 | 8 | 9.98893 | 15 | 0.01107 | 9.85495 | 8 | 73 |
| 28 | 9.84396 | 8 | 9.98908 | 16 | 0.01092 | 9.85487 | 7 | 72 |
| 29 | 9.84404 | 7 | 9.98924 | 15 | 0.01076 | 9.85480 | 7 | 71 |
| 30 | 9.84411 | 8 | 9.98939 | 15 | 0.01061 | 9.85473 | 8 | 70 |
| 31 | 9.84419 | 8 | 9.98954 | 15 | 0.01046 | 9.85465 | 7 | 69 |
| 32 | 9.84427 | 8 | 9.98969 | 15 | 0.01031 | 9.85458 | 8 | 68 |
| 33 | 9.84435 | 7 | 9.98984 | 15 | 0.01016 | 9.85450 | 7 | 67 |
| 34 | 9.84442 | 8 | 9.98999 | 16 | 0.01001 | 9.85443 | 7 | 66 |
| 35 | 9.84450 | 8 | 9.99015 | 15 | 0.00985 | 9.85436 | 8 | 65 |
| 36 | 9.84458 | 8 | 9.99030 | 15 | 0.00970 | 9.85428 | 7 | 64 |
| 37 | 9.84466 | 7 | 9.99045 | 15 | 0.00955 | 9.85421 | 8 | 63 |
| 38 | 9.84473 | 8 | 9.99060 | 15 | 0.00940 | 9.85413 | 7 | 62 |
| 39 | 9.84481 | 8 | 9.99075 | 15 | 0.00925 | 9.85406 | 7 | 61 |
| 40 | 9.84489 | 8 | 9.99090 | 16 | 0.00910 | 9.85399 | 8 | 60 |
| 41 | 9.84497 | 7 | 9.99106 | 15 | 0.00894 | 9.85391 | 7 | 59 |
| 42 | 9.84504 | 8 | 9.99121 | 15 | 0.00879 | 9.85384 | 8 | 58 |
| 43 | 9.84512 | 8 | 9.99136 | 15 | 0.00864 | 9.85376 | 7 | 57 |
| 44 | 9.84520 | 8 | 9.99151 | 15 | 0.00849 | 9.85369 | 8 | 56 |
| 45 | 9.84528 | 7 | 9.99166 | 15 | 0.00834 | 9.85361 | 7 | 55 |
| 46 | 9.84535 | 8 | 9.99181 | 15 | 0.00819 | 9.85354 | 7 | 54 |
| 47 | 9.84543 | 8 | 9.99196 | 16 | 0.00804 | 9.85347 | 8 | 53 |
| 48 | 9.84551 | 7 | 9.99212 | 15 | 0.00788 | 9.85339 | 7 | 52 |
| 49 | 9.84558 | 8 | 9.99227 | 15 | 0.00773 | 9.85332 | 8 | 51 |
| 50 | 9.84566 | | 9.99242 | | 0.00758 | 9.85324 | | 50 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| 16 | |
|---|---|
| 1 | 1.6 |
| 2 | 3.2 |
| 3 | 4.8 |
| 4 | 6.4 |
| 5 | 8.0 |
| 6 | 9.6 |
| 7 | 11.2 |
| 8 | 12.8 |
| 9 | 14.4 |

| 15 | |
|---|---|
| 1 | 1.5 |
| 2 | 3.0 |
| 3 | 4.5 |
| 4 | 6.0 |
| 5 | 7.5 |
| 6 | 9.0 |
| 7 | 10.5 |
| 8 | 12.0 |
| 9 | 13.5 |

| 8 | |
|---|---|
| 1 | 0.8 |
| 2 | 1.6 |
| 3 | 2.4 |
| 4 | 3.2 |
| 5 | 4.0 |
| 6 | 4.8 |
| 7 | 5.6 |
| 8 | 6.4 |
| 9 | 7.2 |

| 7 | |
|---|---|
| 1 | 0.7 |
| 2 | 1.4 |
| 3 | 2.1 |
| 4 | 2.8 |
| 5 | 3.5 |
| 6 | 4.2 |
| 7 | 4.9 |
| 8 | 5.6 |
| 9 | 6.3 |

P. P.

| | Sin. | d. | Tang. | d. c. | Cot. | Cos. | d. | |
|---|---|---|---|---|---|---|---|---|
| 50 | 9.84566 | 8 | 9.99242 | 15 | 0.00758 | 9.85324 | 7 | 50 |
| 51 | 9.84574 | 8 | 9.99257 | 15 | 0.00743 | 9.85317 | 8 | 49 |
| 52 | 9.84582 | 7 | 9.99272 | 15 | 0.00728 | 9.85309 | 7 | 48 |
| 53 | 9.84589 | 8 | 9.99287 | 16 | 0.00713 | 9.85302 | 8 | 47 |
| 54 | 9.84597 | 8 | 9.99303 | 15 | 0.00697 | 9.85294 | 7 | 46 |
| 55 | 9.84605 | 7 | 9.99318 | 15 | 0.00682 | 9.85287 | 8 | 45 |
| 56 | 9.84612 | 8 | 9.99333 | 15 | 0.00667 | 9.85279 | 7 | 44 |
| 57 | 9.84620 | 8 | 9.99348 | 15 | 0.00652 | 9.85272 | 7 | 43 |
| 58 | 9.84628 | 7 | 9.99363 | 15 | 0.00637 | 9.85265 | 8 | 42 |
| 59 | 9.84635 | 8 | 9.99378 | 16 | 0.00622 | 9.85257 | 7 | 41 |
| 60 | 9.84643 | 8 | 9.99394 | 15 | 0.00606 | 9.85250 | 8 | 40 |
| 61 | 9.84651 | 8 | 9.99409 | 15 | 0.00591 | 9.85242 | 7 | 39 |
| 62 | 9.84659 | 7 | 9.99424 | 15 | 0.00576 | 9.85235 | 8 | 38 |
| 63 | 9.84666 | 8 | 9.99439 | 15 | 0.00561 | 9.85227 | 7 | 37 |
| 64 | 9.84674 | 8 | 9.99454 | 15 | 0.00546 | 9.85220 | 8 | 36 |
| 65 | 9.84682 | 7 | 9.99469 | 16 | 0.00531 | 9.85212 | 7 | 35 |
| 66 | 9.84689 | 8 | 9.99485 | 15 | 0.00515 | 9.85205 | 8 | 34 |
| 67 | 9.84697 | 8 | 9.99500 | 15 | 0.00500 | 9.85197 | 7 | 33 |
| 68 | 9.84705 | 7 | 9.99515 | 15 | 0.00485 | 9.85190 | 8 | 32 |
| 69 | 9.84712 | 8 | 9.99530 | 15 | 0.00470 | 9.85182 | 7 | 31 |
| 70 | 9.84720 | 8 | 9.99545 | 15 | 0.00455 | 9.85175 | 8 | 30 |
| 71 | 9.84728 | 7 | 9.99560 | 16 | 0.00440 | 9.85167 | 7 | 29 |
| 72 | 9.84735 | 8 | 9.99576 | 15 | 0.00424 | 9.85160 | 8 | 28 |
| 73 | 9.84743 | 8 | 9.99591 | 15 | 0.00409 | 9.85152 | 7 | 27 |
| 74 | 9.84751 | 7 | 9.99606 | 15 | 0.00394 | 9.85145 | 8 | 26 |
| 75 | 9.84758 | 8 | 9.99621 | 15 | 0.00379 | 9.85137 | 7 | 25 |
| 76 | 9.84766 | 7 | 9.99636 | 15 | 0.00364 | 9.85130 | 8 | 24 |
| 77 | 9.84773 | 8 | 9.99651 | 15 | 0.00349 | 9.85122 | 7 | 23 |
| 78 | 9.84781 | 8 | 9.99666 | 16 | 0.00334 | 9.85115 | 8 | 22 |
| 79 | 9.84789 | 7 | 9.99682 | 15 | 0.00318 | 9.85107 | 7 | 21 |
| 80 | 9.84796 | 8 | 9.99697 | 15 | 0.00303 | 9.85100 | 8 | 20 |
| 81 | 9.84804 | 8 | 9.99712 | 15 | 0.00288 | 9.85092 | 7 | 19 |
| 82 | 9.84812 | 7 | 9.99727 | 15 | 0.00273 | 9.85085 | 8 | 18 |
| 83 | 9.84819 | 8 | 9.99742 | 15 | 0.00258 | 9.85077 | 8 | 17 |
| 84 | 9.84827 | 8 | 9.99757 | 16 | 0.00243 | 9.85069 | 7 | 16 |
| 85 | 9.84835 | 7 | 9.99773 | 15 | 0.00227 | 9.85062 | 8 | 15 |
| 86 | 9.84842 | 8 | 9.99788 | 15 | 0.00212 | 9.85054 | 7 | 14 |
| 87 | 9.84850 | 7 | 9.99803 | 15 | 0.00197 | 9.85047 | 8 | 13 |
| 88 | 9.84857 | 8 | 9.99818 | 15 | 0.00182 | 9.85039 | 7 | 12 |
| 89 | 9.84865 | 8 | 9.99833 | 15 | 0.00167 | 9.85032 | 8 | 11 |
| 90 | 9.84873 | 7 | 9.99848 | 16 | 0.00152 | 9.85024 | 7 | 10 |
| 91 | 9.84880 | 8 | 9.99864 | 15 | 0.00136 | 9.85017 | 8 | 09 |
| 92 | 9.84888 | 7 | 9.99879 | 15 | 0.00121 | 9.85009 | 8 | 08 |
| 93 | 9.84895 | 8 | 9.99894 | 15 | 0.00106 | 9.85001 | 7 | 07 |
| 94 | 9.84903 | 8 | 9.99909 | 15 | 0.00091 | 9.84994 | 8 | 06 |
| 95 | 9.84911 | 7 | 9.99924 | 15 | 0.00076 | 9.84986 | 7 | 05 |
| 96 | 9.84918 | 8 | 9.99939 | 16 | 0.00061 | 9.84979 | 8 | 04 |
| 97 | 9.84926 | 7 | 9.99955 | 15 | 0.00045 | 9.84971 | 7 | 03 |
| 98 | 9.84933 | 8 | 9.99970 | 15 | 0.00030 | 9.84964 | 8 | 02 |
| 99 | 9.84941 | 8 | 9.99985 | 15 | 0.00015 | 9.84956 | 7 | 01 |
| 100 | 9.84949 | | 10.00000 | | 0.00000 | 9.84949 | | 00 |
| | Cos. | d. | Cot. | d. c. | Tang. | Sin. | d. | |

P. P.

| | 16 | 15 | 8 | 7 |
|---|---|---|---|---|
| 1 | 1.6 | 1.5 | 0.8 | 0.7 |
| 2 | 3.2 | 3.0 | 1.6 | 1.4 |
| 3 | 4.8 | 4.5 | 2.4 | 2.1 |
| 4 | 6.4 | 6.0 | 3.2 | 2.8 |
| 5 | 8.0 | 7.5 | 4.0 | 3.5 |
| 6 | 9.6 | 9.0 | 4.8 | 4.2 |
| 7 | 11.2 | 10.5 | 5.6 | 4.9 |
| 8 | 12.8 | 12.0 | 6.4 | 5.6 |
| 9 | 14.4 | 13.5 | 7.2 | 6.3 |

## Verwandlung der Decimaltheile des Grades in Minuten und Secunden, und umgekehrt.

| Gr. | Min. | Sec. | Gr. | Min. | Sec. | Gr. | Sec. |
|---|---|---|---|---|---|---|---|
| ° | ' | " | ° | ' | " | ° | " |
| 0.00 | 0 | 0 | 0.50 | 30 | 0 | 0.0000 | 0 |
| 01 | 0 | 36 | 51 | 30 | 36 | 0003 | 1 |
| 02 | 1 | 12 | 52 | 31 | 12 | 0006 | 2 |
| 03 | 1 | 48 | 53 | 31 | 48 | 0008 | 3 |
| 04 | 2 | 24 | 54 | 32 | 24 | 0011 | 4 |
| 05 | 3 | 0 | 55 | 33 | 0 | 0.0014 | 5 |
| 06 | 3 | 36 | 56 | 33 | 36 | 0017 | 6 |
| 07 | 4 | 12 | 57 | 34 | 12 | 0019 | 7 |
| 08 | 4 | 48 | 58 | 34 | 48 | 0022 | 8 |
| 09 | 5 | 24 | 59 | 35 | 24 | 0025 | 9 |
| 0.10 | 6 | 0 | 0.60 | 36 | 0 | 0.0028 | 10 |
| 11 | 6 | 36 | 61 | 36 | 36 | 0031 | 11 |
| 12 | 7 | 12 | 62 | 37 | 12 | 0033 | 12 |
| 13 | 7 | 48 | 63 | 37 | 48 | 0036 | 13 |
| 14 | 8 | 24 | 64 | 38 | 24 | 0039 | 14 |
| 15 | 9 | 0 | 65 | 39 | 0 | 0.0042 | 15 |
| 16 | 9 | 36 | 66 | 39 | 36 | 0044 | 16 |
| 17 | 10 | 12 | 67 | 40 | 12 | 0047 | 17 |
| 18 | 10 | 48 | 68 | 40 | 48 | 0050 | 18 |
| 19 | 11 | 24 | 69 | 41 | 24 | 0053 | 19 |
| 0.20 | 12 | 0 | 0.70 | 42 | 0 | 0.0056 | 20 |
| 21 | 12 | 36 | 71 | 42 | 36 | 0058 | 21 |
| 22 | 13 | 12 | 72 | 43 | 12 | 0061 | 22 |
| 23 | 13 | 48 | 73 | 43 | 48 | 0064 | 23 |
| 24 | 14 | 24 | 74 | 44 | 24 | 0067 | 24 |
| 25 | 15 | 0 | 75 | 45 | 0 | 0.0069 | 25 |
| 26 | 15 | 36 | 76 | 45 | 36 | 0072 | 26 |
| 27 | 16 | 12 | 77 | 46 | 12 | 0075 | 27 |
| 28 | 16 | 48 | 78 | 46 | 48 | 0078 | 28 |
| 29 | 17 | 24 | 79 | 47 | 24 | 0081 | 29 |
| 0.30 | 18 | 0 | 0.80 | 48 | 0 | 0.0083 | 30 |
| 31 | 18 | 36 | 81 | 48 | 36 | 0086 | 31 |
| 32 | 19 | 12 | 82 | 49 | 12 | 0089 | 32 |
| 33 | 19 | 48 | 83 | 49 | 48 | 0092 | 33 |
| 34 | 20 | 24 | 84 | 50 | 24 | 0094 | 34 |
| 35 | 21 | 0 | 85 | 51 | 0 | 0.0097 | 35 |
| 36 | 21 | 36 | 86 | 51 | 36 | 0100 | 36 |
| 37 | 22 | 12 | 87 | 52 | 12 | | |
| 38 | 22 | 48 | 88 | 52 | 48 | | |
| 39 | 23 | 24 | 89 | 53 | 24 | | |
| 0.40 | 24 | 0 | 0.90 | 54 | 0 | | |
| 41 | 24 | 36 | 91 | 54 | 36 | | |
| 42 | 25 | 12 | 92 | 55 | 12 | | |
| 43 | 25 | 48 | 93 | 55 | 48 | | |
| 44 | 26 | 24 | 94 | 56 | 24 | | |
| 45 | 27 | 0 | 95 | 57 | 0 | | |
| 46 | 27 | 36 | 96 | 57 | 36 | | |
| 47 | 28 | 12 | 97 | 58 | 12 | | |
| 48 | 28 | 48 | 98 | 58 | 48 | | |
| 49 | 29 | 24 | 99 | 59 | 24 | | |
| 0.50 | 30 | 0 | 1.00 | 60 | 0 | | |

# Logarithmen

**zur**

## Berechnung der Summen und Differenzen von Zahlen, deren Logarithmen gegeben sind.

---

**Gegeben: log a und log b, wo a > b, so ist bis A = 10**

| **für Summen** | **für Differenzen** |
|---|---|
| wenn 10 + log b — log a = A | wenn log a — log b = B |
| log (a + b) = log a + B. | log (a — b) = log b + A — 10. |

**Additions- und Subtractions-Logarithmen.**

| A. | B. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 5. | 0.0 0000 | 0001 | 0001 | 0001 | 0001 | 0001 | 0002 | 0002 | 0003 | 0003 |
| 6.0 | 0.0 0004 | 0004 | 0005 | 0005 | 0005 | 0005 | 0005 | 0005 | 0005 | 0005 |
| 1 | 0005 | 0006 | 0006 | 0006 | 0006 | 0006 | 0006 | 0006 | 0007 | 0007 |
| 2 | 0007 | 0007 | 0007 | 0007 | 0008 | 0008 | 0008 | 0008 | 0008 | 0008 |
| 3 | 0009 | 0009 | 0009 | 0009 | 0010 | 0010 | 0010 | 0010 | 0010 | 0011 |
| 4 | 00[illegible] | 0011 | 0011 | 0012 | 0012 | 0012 | 0013 | 0013 | 0013 | 0013 |
| 5 | 0014 | 0014 | 0014 | 0015 | 0015 | 0015 | 0016 | 0016 | 0017 | 0017 |
| 6 | 0017 | 0018 | 0018 | 0019 | 0019 | 0019 | 0020 | 0020 | 0021 | 0021 |
| 7 | 0022 | 0022 | 0023 | 0023 | 0024 | 0024 | 0025 | 0026 | 0026 | 0027 |
| 8 | 0027 | 0028 | 0029 | 0029 | 0030 | 0031 | 0031 | 0032 | 0033 | 0034 |
| 9 | 0034 | 0035 | 0036 | 0037 | 0038 | 0039 | 0040 | 0041 | 0041 | 0042 |
| 7.0 | 0043 | 0044 | 0045 | 0047 | 0048 | 0049 | 0050 | 0051 | 0052 | 0053 |
| 1 | 0055 | 0056 | 0057 | 0059 | 0060 | 0061 | 0063 | 0064 | 0066 | 0067 |
| 2 | 0069 | 0070 | 0072 | 0074 | 0075 | 0077 | 0079 | 0081 | 0083 | 0085 |
| 3 | 0087 | 0089 | 0091 | 0093 | 0095 | 0097 | 0099 | 0102 | 0104 | 0106 |
| 4 | 0109 | 0111 | 0114 | 0117 | 0119 | 0122 | 0125 | 0128 | 0131 | 0134 |
| 5 | 0137 | 0140 | 0144 | 0147 | 0150 | 0154 | 0157 | 0161 | 0165 | 0169 |
| 6 | 0173 | 0177 | 0181 | 0185 | 0189 | 0194 | 0198 | 0203 | 0207 | 0212 |
| 7 | 0217 | 0222 | 0227 | 0233 | 0238 | 0244 | 0249 | 0255 | 0261 | 0267 |
| 8 | 0273 | 0280 | 0286 | 0293 | 0299 | 0306 | 0313 | 0321 | 0328 | 0336 |
| 9 | 0344 | 0352 | 0360 | 0368 | 0377 | 0385 | 0394 | 0403 | 0413 | 0422 |
| 8.0 | 0432 | 0442 | 0452 | 0463 | 0474 | 0485 | 0496 | 0507 | 0519 | 0531 |

**P. P.**

| | 3 | 4 | 5 |
|---|---|---|---|
| 1 | 0.3 | 0.4 | 0.5 |
| 2 | 0.6 | 0.8 | 1.0 |
| 3 | 0.9 | 1.2 | 1.5 |
| 4 | 1.2 | 1.6 | 2.0 |
| 5 | 1.5 | 2.0 | 2.5 |
| 6 | 1.8 | 2.4 | 3.0 |
| 7 | 2.1 | 2.8 | 3.5 |
| 8 | 2.4 | 3.2 | 4.0 |
| 9 | 2.7 | 3.6 | 4.5 |

| | 6 | 7 | 8 |
|---|---|---|---|
| 1 | 0.6 | 0.7 | 0.8 |
| 2 | 1.2 | 1.4 | 1.6 |
| 3 | 1.8 | 2.1 | 2.4 |
| 4 | 2.4 | 2.8 | 3.2 |
| 5 | 3.0 | 3.5 | 4.0 |
| 6 | 3.6 | 4.2 | 4.8 |
| 7 | 4.2 | 4.9 | 5.6 |
| 8 | 4.8 | 5.6 | 6.4 |
| 9 | 5.4 | 6.3 | 7.2 |

| | 9 | 11 | 12 |
|---|---|---|---|
| 1 | 0.9 | 1.1 | 1.2 |
| 2 | 1.8 | 2.2 | 2.4 |
| 3 | 2.7 | 3.3 | 3.6 |
| 4 | 3.6 | 4.4 | 4.8 |
| 5 | 4.5 | 5.5 | 6.0 |
| 6 | 5.4 | 6.6 | 7.2 |
| 7 | 6.3 | 7.7 | 8.4 |
| 8 | 7.2 | 8.8 | 9.6 |
| 9 | 8.1 | 9.9 | 10.8 |

## Additions- und Subtractions-Logarithmen.

| A. | B. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 8.00 | 0.0 0432 | 0433 | 0434 | 0435 | 0436 | 0437 | 0438 | 0439 | 0440 | 0441 |
| 01 | 0442 | 0443 | 0444 | 0445 | 0446 | 0447 | 0448 | 0449 | 0450 | 0451 |
| 02 | 0452 | 0453 | 0454 | 0456 | 0457 | 0458 | 0459 | 0460 | 0461 | 0462 |
| 03 | 0463 | 0464 | 0465 | 0466 | 0467 | 0468 | 0469 | 0470 | 0471 | 0473 |
| 04 | 0474 | 0475 | 0476 | 0477 | 0478 | 0479 | 0480 | 0481 | 0482 | 0483 |
| 05 | 0485 | 0486 | 0487 | 0488 | 0489 | 0490 | 0491 | 0492 | 0494 | 0495 |
| 06 | 0496 | 0497 | 0498 | 0499 | 0500 | 0502 | 0503 | 0504 | 0505 | 0506 |
| 07 | 0507 | 0508 | 0510 | 0511 | 0512 | 0513 | 0514 | 0515 | 0517 | 0518 |
| 08 | 0519 | 0520 | 0521 | 0523 | 0524 | 0525 | 0526 | 0527 | 0529 | 0530 |
| 09 | 0531 | 0532 | 0533 | 0535 | 0536 | 0537 | 0538 | 0540 | 0541 | 0542 |
| 8.10 | 0.0 0543 | 0545 | 0546 | 0547 | 0548 | 0550 | 0551 | 0552 | 0553 | 0555 |
| 11 | 0556 | 0557 | 0558 | 0560 | 0561 | 0562 | 0564 | 0565 | 0566 | 0567 |
| 12 | 0569 | 0570 | 0571 | 0573 | 0574 | 0575 | 0577 | 0578 | 0579 | 0581 |
| 13 | 0582 | 0583 | 0585 | 0586 | 0587 | 0589 | 0590 | 0591 | 0593 | 0594 |
| 14 | 0595 | 0597 | 0598 | 0599 | 0601 | 0602 | 0604 | 0605 | 0606 | 0608 |
| 15 | 0609 | 0611 | 0612 | 0613 | 0615 | 0616 | 0618 | 0619 | 0620 | 0622 |
| 16 | 0623 | 0625 | 0626 | 0628 | 0629 | 0630 | 0632 | 0633 | 0635 | 0636 |
| 17 | 0638 | 0639 | 0641 | 0642 | 0644 | 0645 | 0646 | 0648 | 0649 | 0651 |
| 18 | 0652 | 0654 | 0655 | 0657 | 0658 | 0660 | 0661 | 0663 | 0664 | 0666 |
| 19 | 0667 | 0669 | 0671 | 0672 | 0674 | 0675 | 0677 | 0678 | 0680 | 0681 |
| 8.20 | 0.0 0683 | 0684 | 0686 | 0688 | 0689 | 0691 | 0692 | 0694 | 0696 | 0697 |
| 21 | 0699 | 0700 | 0702 | 0703 | 0705 | 0707 | 0708 | 0710 | 0712 | 0713 |
| 22 | 0715 | 0716 | 0718 | 0720 | 0721 | 0723 | 0725 | 0726 | 0728 | 0730 |
| 23 | 0731 | 0733 | 0735 | 0736 | 0738 | 0740 | 0741 | 0743 | 0745 | 0747 |
| 24 | 0748 | 0750 | 0752 | 0753 | 0755 | 0757 | 0759 | 0760 | 0762 | 0764 |
| 25 | 0766 | 0767 | 0769 | 0771 | 0773 | 0774 | 0776 | 0778 | 0780 | 0781 |
| 26 | 0783 | 0785 | 0787 | 0789 | 0790 | 0792 | 0794 | 0796 | 0798 | 0799 |
| 27 | 0801 | 0803 | 0805 | 0807 | 0809 | 0810 | 0812 | 0814 | 0816 | 0818 |
| 28 | 0820 | 0822 | 0823 | 0825 | 0827 | 0829 | 0831 | 0833 | 0835 | 0837 |
| 29 | 0839 | 0841 | 0842 | 0844 | 0846 | 0848 | 0850 | 0852 | 0854 | 0856 |
| 8.30 | 0.0 0858 | 0860 | 0862 | 0864 | 0866 | 0868 | 0870 | 0872 | 0874 | 0876 |
| 31 | 0878 | 0880 | 0882 | 0884 | 0886 | 0888 | 0890 | 0892 | 0894 | 0896 |
| 32 | 0898 | 0900 | 0902 | 0904 | 0906 | 0908 | 0910 | 0912 | 0915 | 0917 |
| 33 | 0919 | 0921 | 0923 | 0925 | 0927 | 0929 | 0931 | 0933 | 0936 | 0938 |
| 34 | 0940 | 0942 | 0944 | 0946 | 0948 | 0951 | 0953 | 0955 | 0957 | 0959 |
| 35 | 0962 | 0964 | 0966 | 0968 | 0970 | 0973 | 0975 | 0977 | 0979 | 0981 |
| 36 | 0984 | 0986 | 0988 | 0990 | 0993 | 0995 | 0997 | 0999 | 1002 | 1004 |
| 37 | 1006 | 1009 | 1011 | 1013 | 1016 | 1018 | 1020 | 1022 | 1025 | 1027 |
| 38 | 1030 | 1032 | 1034 | 1037 | 1039 | 1041 | 1044 | 1046 | 1048 | 1051 |
| 39 | 1053 | 1056 | 1058 | 1060 | 1063 | 1065 | 1068 | 1070 | 1073 | 1075 |
| 8.40 | 0.0 1077 | 1080 | 1082 | 1085 | 1087 | 1090 | 1092 | 1095 | 1097 | 1100 |
| 41 | 1102 | 1105 | 1107 | 1110 | 1112 | 1115 | 1117 | 1120 | 1122 | 1125 |
| 42 | 1128 | 1130 | 1133 | 1135 | 1138 | 1140 | 1143 | 1146 | 1148 | 1151 |
| 43 | 1153 | 1156 | 1159 | 1161 | 1164 | 1167 | 1169 | 1172 | 1175 | 1177 |
| 44 | 1180 | 1183 | 1185 | 1188 | 1191 | 1193 | 1196 | 1199 | 1202 | 1204 |
| 45 | 1207 | 1210 | 1213 | 1215 | 1218 | 1221 | 1224 | 1226 | 1229 | 1232 |
| 46 | 1235 | 1238 | 1240 | 1243 | 1246 | 1249 | 1252 | 1255 | 1257 | 1260 |
| 47 | 1263 | 1266 | 1269 | 1272 | 1275 | 1278 | 1280 | 1283 | 1286 | 1289 |
| 48 | 1292 | 1295 | 1298 | 1301 | 1304 | 1307 | 1310 | 1313 | 1316 | 1319 |
| 49 | 1322 | 1325 | 1328 | 1331 | 1334 | 1337 | 1340 | 1343 | 1346 | 1349 |
| 8.50 | 0.0 1352 | 1355 | 1358 | 1361 | 1364 | 1368 | 1371 | 1374 | 1377 | 1380 |

P. P.

| | 2 |
|---|---|
| 1 | 0.2 |
| 2 | 0.4 |
| 3 | 0.6 |
| 4 | 0.8 |
| 5 | 1.0 |
| 6 | 1.2 |
| 7 | 1.4 |
| 8 | 1.6 |
| 9 | 1.8 |

| | 3 |
|---|---|
| 1 | 0.3 |
| 2 | 0.6 |
| 3 | 0.9 |
| 4 | 1.2 |
| 5 | 1.5 |
| 6 | 1.8 |
| 7 | 2.1 |
| 8 | 2.4 |
| 9 | 2.7 |

| | 4 |
|---|---|
| 1 | 0.4 |
| 2 | 0.8 |
| 3 | 1.2 |
| 4 | 1.6 |
| 5 | 2.0 |
| 6 | 2.4 |
| 7 | 2.8 |
| 8 | 3.2 |
| 9 | 3.6 |

## Additions- und Subtractions-Logarithmen.

| A. | B. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 8.50 | 0.0 1352 | 1355 | 1358 | 1361 | 1364 | 1368 | 1371 | 1374 | 1377 | 1380 |
| 51 | 1383 | 1386 | 1389 | 1393 | 1396 | 1399 | 1402 | 1405 | 1408 | 1412 |
| 52 | 1415 | 1418 | 1421 | 1424 | 1428 | 1431 | 1434 | 1437 | 1441 | 1444 |
| 53 | 1447 | 1450 | 1454 | 1457 | 1460 | 1464 | 1467 | 1470 | 1474 | 1477 |
| 54 | 1480 | 1484 | 1487 | 1490 | 1494 | 1497 | 1501 | 1504 | 1507 | 1511 |
| 55 | 1514 | 1518 | 1521 | 1525 | 1528 | 1531 | 1535 | 1538 | 1542 | 1545 |
| 56 | 1549 | 1552 | 1556 | 1559 | 1563 | 1566 | 1570 | 1574 | 1577 | 1581 |
| 57 | 1584 | 1588 | 1591 | 1595 | 1599 | 1602 | 1606 | 1610 | 1613 | 1617 |
| 58 | 1621 | 1624 | 1628 | 1632 | 1635 | 1639 | 1643 | 1646 | 1650 | 1654 |
| 59 | 1658 | 1661 | 1665 | 1669 | 1673 | 1676 | 1680 | 1684 | 1688 | 1692 |
| 8.60 | 0.0 1695 | 1699 | 1703 | 1707 | 1711 | 1715 | 1719 | 1722 | 1726 | 1730 |
| 61 | 1734 | 1738 | 1742 | 1746 | 1750 | 1754 | 1758 | 1762 | 1766 | 1770 |
| 62 | 1774 | 1778 | 1782 | 1786 | 1790 | 1794 | 1798 | 1802 | 1806 | 1810 |
| 63 | 1814 | 1818 | 1822 | 1827 | 1831 | 1835 | 1839 | 1843 | 1847 | 1851 |
| 64 | 1856 | 1860 | 1864 | 1868 | 1872 | 1877 | 1881 | 1885 | 1889 | 1894 |
| 65 | 1898 | 1902 | 1906 | 1911 | 1915 | 1919 | 1924 | 1928 | 1932 | 1937 |
| 66 | 1941 | 1945 | 1950 | 1954 | 1959 | 1963 | 1967 | 1972 | 1976 | 1981 |
| 67 | 1985 | 1990 | 1994 | 1999 | 2003 | 2008 | 2012 | 2017 | 2021 | 2026 |
| 68 | 2030 | 2035 | 2040 | 2044 | 2049 | 2053 | 2058 | 2063 | 2067 | 2072 |
| 69 | 2077 | 2081 | 2086 | 2091 | 2095 | 2100 | 2105 | 2110 | 2114 | 2119 |
| 8.70 | 0.0 2124 | 2129 | 2133 | 2138 | 2143 | 2148 | 2153 | 2158 | 2162 | 2167 |
| 71 | 2172 | 2177 | 2182 | 2187 | 2192 | 2197 | 2202 | 2207 | 2211 | 2216 |
| 72 | 2221 | 2226 | 2231 | 2236 | 2241 | 2246 | 2252 | 2257 | 2262 | 2267 |
| 73 | 2272 | 2277 | 2282 | 2287 | 2292 | 2297 | 2303 | 2308 | 2313 | 2318 |
| 74 | 2323 | 2329 | 2334 | 2339 | 2344 | 2350 | 2355 | 2360 | 2365 | 2371 |
| 75 | 2376 | 2381 | 2387 | 2392 | 2397 | 2403 | 2408 | 2414 | 2419 | 2424 |
| 76 | 2430 | 2435 | 2441 | 2446 | 2452 | 2457 | 2463 | 2468 | 2474 | 2479 |
| 77 | 2485 | 2490 | 2496 | 2502 | 2507 | 2513 | 2518 | 2524 | 2530 | 2535 |
| 78 | 2541 | 2547 | 2552 | 2558 | 2564 | 2570 | 2575 | 2581 | 2587 | 2593 |
| 79 | 2599 | 2604 | 2610 | 2616 | 2622 | 2628 | 2634 | 2639 | 2645 | 2651 |
| 8.80 | 0.0 2657 | 2663 | 2669 | 2675 | 2681 | 2687 | 2693 | 2699 | 2705 | 2711 |
| 81 | 2717 | 2723 | 2729 | 2735 | 2742 | 2748 | 2754 | 2760 | 2766 | 2772 |
| 82 | 2779 | 2785 | 2791 | 2797 | 2803 | 2810 | 2816 | 2822 | 2829 | 2835 |
| 83 | 2841 | 2848 | 2854 | 2860 | 2867 | 2873 | 2879 | 2886 | 2892 | 2899 |
| 84 | 2905 | 2912 | 2918 | 2925 | 2931 | 2938 | 2944 | 2951 | 2957 | 2964 |
| 85 | 2971 | 2977 | 2984 | 2991 | 2997 | 3004 | 3011 | 3017 | 3024 | 3031 |
| 86 | 3037 | 3044 | 3051 | 3058 | 3065 | 3071 | 3078 | 3085 | 3092 | 3099 |
| 87 | 3106 | 3113 | 3120 | 3126 | 3133 | 3140 | 3147 | 3154 | 3161 | 3168 |
| 88 | 3175 | 3183 | 3190 | 3197 | 3204 | 3211 | 3218 | 3225 | 3232 | 3240 |
| 89 | 3247 | 3254 | 3261 | 3268 | 3276 | 3283 | 3290 | 3298 | 3305 | 3312 |
| 8.90 | 0.0 3320 | 3327 | 3334 | 3342 | 3349 | 3357 | 3364 | 3371 | 3379 | 3386 |
| 91 | 3394 | 3401 | 3409 | 3417 | 3424 | 3432 | 3439 | 3447 | 3455 | 3462 |
| 92 | 3470 | 3478 | 3485 | 3493 | 3501 | 3509 | 3516 | 3524 | 3532 | 3540 |
| 93 | 3548 | 3555 | 3563 | 3571 | 3579 | 3587 | 3595 | 3603 | 3611 | 3619 |
| 94 | 3627 | 3635 | 3643 | 3651 | 3659 | 3667 | 3675 | 3683 | 3691 | 3700 |
| 95 | 3708 | 3716 | 3724 | 3732 | 3741 | 3749 | 3757 | 3765 | 3774 | 3782 |
| 96 | 3790 | 3799 | 3807 | 3816 | 3824 | 3832 | 3841 | 3849 | 3858 | 3866 |
| 97 | 3875 | 3883 | 3892 | 3901 | 3909 | 3918 | 3926 | 3935 | 3944 | 3953 |
| 98 | 3961 | 3970 | 3979 | 3987 | 3996 | 4005 | 4014 | 4023 | 4032 | 4040 |
| 99 | 4049 | 4058 | 4067 | 4076 | 4085 | 4094 | 4103 | 4112 | 4121 | 4130 |
| 9.00 | 0.0 4139 | 4148 | 4157 | 4167 | 4176 | 4185 | 4194 | 4203 | 4213 | 4222 |

**P. P.**

| | 8 |
|---|---|
| 1 | 0.3 |
| 2 | 0.6 |
| 3 | 0.9 |
| 4 | 1.2 |
| 5 | 1.5 |
| 6 | 1.8 |
| 7 | 2.1 |
| 8 | 2.4 |
| 9 | 2.7 |

| | 4 | 5 |
|---|---|---|
| 1 | 0.4 | 0.5 |
| 2 | 0.8 | 1.0 |
| 3 | 1.2 | 1.5 |
| 4 | 1.6 | 2.0 |
| 5 | 2.0 | 2.5 |
| 6 | 2.4 | 3.0 |
| 7 | 2.8 | 3.5 |
| 8 | 3.2 | 4.0 |
| 9 | 3.6 | 4.5 |

| | 6 |
|---|---|
| 1 | 0.6 |
| 2 | 1.2 |
| 3 | 1.8 |
| 4 | 2.4 |
| 5 | 3.0 |
| 6 | 3.6 |
| 7 | 4.2 |
| 8 | 4.8 |
| 9 | 5.4 |

| | 7 | 8 |
|---|---|---|
| 1 | 0.7 | 0.8 |
| 2 | 1.4 | 1.6 |
| 3 | 2.1 | 2.4 |
| 4 | 2.8 | 3.2 |
| 5 | 3.5 | 4.0 |
| 6 | 4.2 | 4.8 |
| 7 | 4.9 | 5.6 |
| 8 | 5.6 | 6.4 |
| 9 | 6.3 | 7.2 |

| | 9 |
|---|---|
| 1 | 0.9 |
| 2 | 1.8 |
| 3 | 2.7 |
| 4 | 3.6 |
| 5 | 4.5 |
| 6 | 5.4 |
| 7 | 6.3 |
| 8 | 7.2 |
| 9 | 8.1 |

## Additions- und Subtractions-Logarithmen.

| A. | B. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 9.00 | 0.0 4139 | 4148 | 4157 | 4167 | 4176 | 4185 | 4194 | 4203 | 4213 | 4222 |
| 01 | 4231 | 4240 | 4250 | 4259 | 4268 | 4278 | 4287 | 4297 | 4306 | 4315 |
| 02 | 4325 | 4334 | 4344 | 4353 | 4363 | 4373 | 4382 | 4392 | 4401 | 4411 |
| 03 | 4421 | 4430 | 4440 | 4450 | 4460 | 4469 | 4479 | 4489 | 4499 | 4509 |
| 04 | 4519 | 4528 | 4538 | 4548 | 4558 | 4568 | 4578 | 4588 | 4598 | 4608 |
| 05 | 4618 | 4628 | 4639 | 4649 | 4659 | 4669 | 4679 | 4689 | 4700 | 4710 |
| 06 | 4720 | 4731 | 4741 | 4751 | 4762 | 4772 | 4782 | 4793 | 4803 | 4814 |
| 07 | 4824 | 4835 | 4845 | 4856 | 4867 | 4877 | 4888 | 4898 | 4909 | 4920 |
| 08 | 4931 | 4941 | 4952 | 4963 | 4974 | 4985 | 4995 | 5006 | 5017 | 5028 |
| 09 | 5039 | 5050 | 5061 | 5072 | 5083 | 5094 | 5105 | 5116 | 5127 | 5139 |
| 9.10 | 0.0 5150 | 5161 | 5172 | 5183 | 5195 | 5206 | 5217 | 5229 | 5240 | 5251 |
| 11 | 5263 | 5274 | 5286 | 5297 | 5308 | 5320 | 5332 | 5343 | 5355 | 5366 |
| 12 | 5378 | 5390 | 5401 | 5413 | 5425 | 5436 | 5448 | 5460 | 5472 | 5484 |
| 13 | 5496 | 5508 | 5519 | 5531 | 5543 | 5555 | 5567 | 5579 | 5591 | 5604 |
| 14 | 5616 | 5628 | 5640 | 5652 | 5664 | 5677 | 5689 | 5701 | 5714 | 5726 |
| 15 | 5738 | 5751 | 5763 | 5775 | 5788 | 5800 | 5813 | 5825 | 5838 | 5851 |
| 16 | 5863 | 5876 | 5889 | 5901 | 5914 | 5927 | 5939 | 5952 | 5965 | 5978 |
| 17 | 5991 | 6004 | 6017 | 6030 | 6043 | 6056 | 6069 | 6082 | 6095 | 6108 |
| 18 | 6121 | 6134 | 6147 | 6161 | 6174 | 6187 | 6200 | 6214 | 6227 | 6240 |
| 19 | 6254 | 6267 | 6281 | 6294 | 6308 | 6321 | 6335 | 6348 | 6362 | 6376 |
| 9.20 | 0.0 6389 | 6403 | 6417 | 6430 | 6444 | 6458 | 6472 | 6486 | 6500 | 6513 |
| 21 | 6527 | 6541 | 6555 | 6569 | 6583 | 6597 | 6612 | 6626 | 6640 | 6654 |
| 22 | 6668 | 6683 | 6697 | 6711 | 6725 | 6740 | 6754 | 6769 | 6783 | 6798 |
| 23 | 6812 | 6827 | 6841 | 6856 | 6870 | 6885 | 6900 | 6914 | 6929 | 6944 |
| 24 | 6959 | 6973 | 6988 | 7003 | 7018 | 7033 | 7048 | 7063 | 7078 | 7093 |
| 25 | 7108 | 7123 | 7138 | 7154 | 7169 | 7184 | 7199 | 7215 | 7230 | 7245 |
| 26 | 7261 | 7276 | 7291 | 7307 | 7322 | 7338 | 7354 | 7369 | 7385 | 7400 |
| 27 | 7416 | 7432 | 7448 | 7463 | 7479 | 7495 | 7511 | 7527 | 7543 | 7559 |
| 28 | 7575 | 7591 | 7607 | 7623 | 7639 | 7655 | 7671 | 7687 | 7704 | 7720 |
| 29 | 7736 | 7753 | 7769 | 7785 | 7802 | 7818 | 7835 | 7851 | 7868 | 7884 |
| 9.30 | 0.0 7901 | 7918 | 7934 | 7951 | 7968 | 7985 | 8001 | 8018 | 8035 | 8052 |
| 31 | 8069 | 8086 | 8103 | 8120 | 8137 | 8154 | 8171 | 8188 | 8206 | 8223 |
| 32 | 8240 | 8257 | 8275 | 8292 | 8309 | 8327 | 8344 | 8362 | 8379 | 8397 |
| 33 | 8415 | 8432 | 8450 | 8468 | 8485 | 8503 | 8521 | 8539 | 8557 | 8574 |
| 34 | 8592 | 8610 | 8628 | 8646 | 8664 | 8683 | 8701 | 8719 | 8737 | 8755 |
| 35 | 8774 | 8792 | 8810 | 8829 | 8847 | 8865 | 8884 | 8902 | 8921 | 8940 |
| 36 | 8958 | 8977 | 8996 | 9014 | 9033 | 9052 | 9071 | 9090 | 9108 | 9127 |
| 37 | 9146 | 9165 | 9184 | 9204 | 9223 | 9242 | 9261 | 9280 | 9299 | 9319 |
| 38 | 9338 | 9357 | 9377 | 9396 | 9416 | 9435 | 9455 | 9474 | 9494 | 9514 |
| 39 | 9533 | 9553 | 9573 | 9593 | 9612 | 9632 | 9652 | 9672 | 9692 | 9712 |
| 9.40 | 0.0 9732 | 9752 | 9773 | 9793 | 9813 | 9833 | 9853 | 9874 | 9894 | 9914 |
| 41 | 0.0 9935 | 9955 | 9976 | 9996 | $\bar{0}017$ | $\bar{0}038$ | $\bar{0}058$ | $\bar{0}079$ | $\bar{0}100$ | $\bar{0}120$ |
| 42 | 0.1 0141 | 0162 | 0183 | 0204 | 0225 | 0246 | 0267 | 0288 | 0309 | 0330 |
| 43 | 0351 | 0373 | 0394 | 0415 | 0437 | 0458 | 0479 | 0501 | 0522 | 0544 |
| 44 | 0565 | 0587 | 0609 | 0630 | 0652 | 0674 | 0696 | 0718 | 0739 | 0761 |
| 45 | 0783 | 0805 | 0827 | 0849 | 0872 | 0894 | 0916 | 0938 | 0960 | 0983 |
| 46 | 1005 | 1028 | 1050 | 1073 | 1095 | 1118 | 1140 | 1163 | 1186 | 1208 |
| 47 | 1231 | 1254 | 1277 | 1300 | 1323 | 1345 | 1368 | 1392 | 1415 | 1438 |
| 48 | 1461 | 1484 | 1507 | 1531 | 1554 | 1577 | 1601 | 1624 | 1648 | 1671 |
| 49 | 1695 | 1719 | 1742 | 1766 | 1790 | 1814 | 1837 | 1861 | 1885 | 1909 |
| 9.50 | 0.1 1933 | 1957 | 1981 | 2005 | 2030 | 2054 | 2078 | 2102 | 2127 | 2151 |

P. P.

| | 9 | 10 |
|---|---|---|
| 1 | 0.9 | 1.0 |
| 2 | 1.8 | 2.0 |
| 3 | 2.7 | 3.0 |
| 4 | 3.6 | 4.0 |
| 5 | 4.5 | 5.0 |
| 6 | 5.4 | 6.0 |
| 7 | 6.3 | 7.0 |
| 8 | 7.2 | 8.0 |
| 9 | 8.1 | 9.0 |

| | 11 | 12 | 13 |
|---|---|---|---|
| 1 | 1.1 | 1.2 | 1.3 |
| 2 | 2.2 | 2.4 | 2.6 |
| 3 | 3.3 | 3.6 | 3.9 |
| 4 | 4.4 | 4.8 | 5.2 |
| 5 | 5.5 | 6.0 | 6.5 |
| 6 | 6.6 | 7.2 | 7.8 |
| 7 | 7.7 | 8.4 | 9.1 |
| 8 | 8.8 | 9.6 | 10.4 |
| 9 | 9.9 | 10.8 | 11.7 |

| | 14 | 15 | 16 |
|---|---|---|---|
| 1 | 1.4 | 1.5 | 1.6 |
| 2 | 2.8 | 3.0 | 3.2 |
| 3 | 4.2 | 4.5 | 4.8 |
| 4 | 5.6 | 6.0 | 6.4 |
| 5 | 7.0 | 7.5 | 8.0 |
| 6 | 8.4 | 9.0 | 9.6 |
| 7 | 9.8 | 10.5 | 11.2 |
| 8 | 11.2 | 12.0 | 12.8 |
| 9 | 12.6 | 13.5 | 14.4 |

| | 17 | 18 | 19 |
|---|---|---|---|
| 1 | 1.7 | 1.8 | 1.9 |
| 2 | 3.4 | 3.6 | 3.8 |
| 3 | 5.1 | 5.4 | 5.7 |
| 4 | 6.8 | 7.2 | 7.6 |
| 5 | 8.5 | 9.0 | 9.5 |
| 6 | 10.2 | 10.8 | 11.4 |
| 7 | 11.9 | 12.6 | 13.3 |
| 8 | 13.6 | 14.4 | 15.2 |
| 9 | 15.3 | 16.2 | 17.1 |

| | 20 | 21 | 22 |
|---|---|---|---|
| 1 | 2.0 | 2.1 | 2.2 |
| 2 | 4.0 | 4.2 | 4.4 |
| 3 | 6.0 | 6.3 | 6.6 |
| 4 | 8.0 | 8.4 | 8.8 |
| 5 | 10.0 | 10.5 | 11.0 |
| 6 | 12.0 | 12.6 | 13.2 |
| 7 | 14.0 | 14.7 | 15.4 |
| 8 | 16.0 | 16.8 | 17.6 |
| 9 | 18.0 | 18.9 | 19.8 |

| | 23 | 24 | 25 |
|---|---|---|---|
| 1 | 2.3 | 2.4 | 2.5 |
| 2 | 4.6 | 4.8 | 5.0 |
| 3 | 6.9 | 7.2 | 7.5 |
| 4 | 9.2 | 9.6 | 10.0 |
| 5 | 11.5 | 12.0 | 12.5 |
| 6 | 13.8 | 14.4 | 15.0 |
| 7 | 16.1 | 16.8 | 17.5 |
| 8 | 18.4 | 19.2 | 20.0 |
| 9 | 20.7 | 21.6 | 22.5 |

## Additions- und Subtractions-Logarithmen.

| A. | B. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 9.50 | 0.1 1933 | 1957 | 1981 | 2005 | 2030 | 2054 | 2078 | 2102 | 2127 | 2151 |
| 51 | 2175 | 2200 | 2224 | 2249 | 2274 | 2298 | 2323 | 2348 | 2372 | 2397 |
| 52 | 2422 | 2447 | 2472 | 2497 | 2522 | 2547 | 2572 | 2597 | 2622 | 2648 |
| 53 | 2673 | 2698 | 2724 | 2749 | 2775 | 2800 | 2826 | 2851 | 2877 | 2903 |
| 54 | 2928 | 2954 | 2980 | 3006 | 3032 | 3058 | 3084 | 3110 | 3136 | 3162 |
| 55 | 3188 | 3214 | 3240 | 3267 | 3293 | 3319 | 3346 | 3372 | 3399 | 3425 |
| 56 | 3452 | 3479 | 3505 | 3532 | 3559 | 3586 | 3613 | 3640 | 3667 | 3694 |
| 57 | 3721 | 3748 | 3775 | 3802 | 3829 | 3857 | 3884 | 3911 | 3939 | 3966 |
| 58 | 3994 | 4021 | 4049 | 4077 | 4104 | 4132 | 4160 | 4188 | 4216 | 4244 |
| 59 | 4272 | 4300 | 4328 | 4356 | 4384 | 4412 | 4441 | 4469 | 4497 | 4526 |
| 9.60 | 0.1 4554 | 4583 | 4611 | 4640 | 4668 | 4697 | 4726 | 4755 | 4783 | 4812 |
| 61 | 4841 | 4870 | 4899 | 4928 | 4957 | 4986 | 5016 | 5045 | 5074 | 5104 |
| 62 | 5133 | 5162 | 5192 | 5221 | 5251 | 5281 | 5310 | 5340 | 5370 | 5400 |
| 63 | 5430 | 5460 | 5489 | 5520 | 5550 | 5580 | 5610 | 5640 | 5670 | 5701 |
| 64 | 5731 | 5761 | 5792 | 5822 | 5853 | 5884 | 5914 | 5945 | 5976 | 6007 |
| 65 | 6037 | 6068 | 6099 | 6130 | 6161 | 6192 | 6224 | 6255 | 6286 | 6317 |
| 66 | 6349 | 6380 | 6411 | 6443 | 6474 | 6506 | 6538 | 6569 | 6601 | 6633 |
| 67 | 6665 | 6697 | 6729 | 6761 | 6793 | 6825 | 6857 | 6889 | 6921 | 6954 |
| 68 | 6986 | 7018 | 7051 | 7083 | 7116 | 7148 | 7181 | 7214 | 7247 | 7279 |
| 69 | 7312 | 7345 | 7378 | 7411 | 7444 | 7477 | 7510 | 7544 | 7577 | 7610 |
| 9.70 | 0.1 7643 | 7677 | 7710 | 7744 | 7777 | 7811 | 7845 | 7878 | 7912 | 7946 |
| 71 | 7980 | 8014 | 8048 | 8082 | 8116 | 8150 | 8184 | 8218 | 8253 | 8287 |
| 72 | 8322 | 8356 | 8390 | 8425 | 8460 | 8494 | 8529 | 8564 | 8599 | 8633 |
| 73 | 8668 | 8703 | 8738 | 8773 | 8808 | 8844 | 8879 | 8914 | 8949 | 8985 |
| 74 | 9020 | 9056 | 9091 | 9127 | 9163 | 9198 | 9234 | 9270 | 9306 | 9342 |
| 75 | 9378 | 9414 | 9450 | 9486 | 9522 | 9558 | 9595 | 9631 | 9667 | 9704 |
| 76 | 0.1 9740 | 9777 | 9813 | 9850 | 9887 | 9923 | 9960 | 9997 | 0034 | 0071 |
| 77 | 0.2 0108 | 0145 | 0182 | 0220 | 0257 | 0294 | 0331 | 0369 | 0406 | 0444 |
| 78 | 0481 | 0519 | 0557 | 0594 | 0632 | 0670 | 0708 | 0746 | 0784 | 0822 |
| 79 | 0860 | 0898 | 0937 | 0975 | 1013 | 1052 | 1090 | 1128 | 1167 | 1206 |
| 9.80 | 0.2 1244 | 1283 | 1322 | 1361 | 1399 | 1438 | 1477 | 1516 | 1556 | 1595 |
| 81 | 1634 | 1673 | 1712 | 1752 | 1791 | 1831 | 1870 | 1910 | 1949 | 1989 |
| 82 | 2029 | 2069 | 2109 | 2149 | 2189 | 2229 | 2269 | 2309 | 2349 | 2389 |
| 83 | 2430 | 2470 | 2510 | 2551 | 2591 | 2632 | 2673 | 2713 | 2754 | 2795 |
| 84 | 2836 | 2877 | 2918 | 2959 | 3000 | 3041 | 3082 | 3123 | 3165 | 3206 |
| 85 | 3247 | 3289 | 3330 | 3372 | 3414 | 3455 | 3497 | 3539 | 3581 | 3623 |
| 86 | 3665 | 3707 | 3749 | 3791 | 3833 | 3875 | 3918 | 3960 | 4003 | 4045 |
| 87 | 4088 | 4130 | 4173 | 4216 | 4258 | 4301 | 4344 | 4387 | 4430 | 4473 |
| 88 | 4516 | 4559 | 4603 | 4646 | 4689 | 4733 | 4776 | 4819 | 4863 | 4907 |
| 89 | 4950 | 4994 | 5038 | 5082 | 5126 | 5170 | 5214 | 5258 | 5302 | 5346 |
| 9.90 | 0.2 5390 | 5434 | 5479 | 5523 | 5568 | 5612 | 5657 | 5701 | 5746 | 5791 |
| 91 | 5836 | 5881 | 5926 | 5970 | 6016 | 6061 | 6106 | 6151 | 6196 | 6242 |
| 92 | 6287 | 6332 | 6378 | 6423 | 6469 | 6515 | 6560 | 6606 | 6652 | 6698 |
| 93 | 6744 | 6790 | 6836 | 6882 | 6928 | 6974 | 7021 | 7067 | 7114 | 7160 |
| 94 | 7207 | 7253 | 7300 | 7346 | 7393 | 7440 | 7487 | 7534 | 7581 | 7628 |
| 95 | 7675 | 7722 | 7769 | 7817 | 7864 | 7911 | 7959 | 8006 | 8054 | 8101 |
| 96 | 8149 | 8197 | 8245 | 8292 | 8340 | 8388 | 8436 | 8484 | 8532 | 8581 |
| 97 | 8629 | 8677 | 8726 | 8774 | 8822 | 8871 | 8920 | 8968 | 9017 | 9066 |
| 98 | 9115 | 9163 | 9212 | 9261 | 9310 | 9359 | 9409 | 9458 | 9507 | 9556 |
| 99 | 0.2 9606 | 9655 | 9705 | 9754 | 9804 | 9854 | 9903 | 9953 | 0003 | 0053 |
| 10.00 | 0.3 0103 | 0153 | 0203 | 0253 | 0303 | 0354 | 0404 | 0454 | 0505 | 0555 |

P. P.

| | 24 | 25 | 26 | 27 |
|---|---|---|---|---|
| 1 | 2.4 | 2.5 | 2.6 | 2.7 |
| 2 | 4.8 | 5.0 | 5.2 | 5.4 |
| 3 | 7.2 | 7.5 | 7.8 | 8.1 |
| 4 | 9.6 | 10.0 | 10.4 | 10.8 |
| 5 | 12.0 | 12.5 | 13.0 | 13.5 |
| 6 | 14.4 | 15.0 | 15.6 | 16.2 |
| 7 | 16.8 | 17.5 | 18.2 | 18.9 |
| 8 | 19.2 | 20.0 | 20.8 | 21.6 |
| 9 | 21.6 | 22.5 | 23.4 | 24.3 |

| | 28 | 29 | 30 | 31 |
|---|---|---|---|---|
| 1 | 2.8 | 2.9 | 3.0 | 3.1 |
| 2 | 5.6 | 5.8 | 6.0 | 6.2 |
| 3 | 8.4 | 8.7 | 9.0 | 9.3 |
| 4 | 11.2 | 11.6 | 12.0 | 12.4 |
| 5 | 14.0 | 14.5 | 15.0 | 15.5 |
| 6 | 16.8 | 17.4 | 18.0 | 18.6 |
| 7 | 19.6 | 20.3 | 21.0 | 21.7 |
| 8 | 22.4 | 23.2 | 24.0 | 24.8 |
| 9 | 25.2 | 26.1 | 27.0 | 27.9 |

| | 32 | 33 | 34 | 35 |
|---|---|---|---|---|
| 1 | 3.2 | 3.3 | 3.4 | 3.5 |
| 2 | 6.4 | 6.6 | 6.8 | 7.0 |
| 3 | 9.6 | 9.9 | 10.2 | 10.5 |
| 4 | 12.8 | 13.2 | 13.6 | 14.0 |
| 5 | 16.0 | 16.5 | 17.0 | 17.5 |
| 6 | 19.2 | 19.8 | 20.4 | 21.0 |
| 7 | 22.4 | 23.1 | 23.8 | 24.5 |
| 8 | 25.6 | 26.4 | 27.2 | 28.0 |
| 9 | 28.8 | 29.7 | 30.6 | 31.5 |

| | 36 | 37 | 38 | 39 |
|---|---|---|---|---|
| 1 | 3.6 | 3.7 | 3.8 | 3.9 |
| 2 | 7.2 | 7.4 | 7.6 | 7.8 |
| 3 | 10.8 | 11.1 | 11.4 | 11.7 |
| 4 | 14.4 | 14.8 | 15.2 | 15.6 |
| 5 | 18.0 | 18.5 | 19.0 | 19.5 |
| 6 | 21.6 | 22.2 | 22.8 | 23.4 |
| 7 | 25.2 | 25.9 | 26.6 | 27.3 |
| 8 | 28.8 | 29.6 | 30.4 | 31.2 |
| 9 | 32.4 | 33.3 | 34.2 | 35.1 |

| | 40 | 41 | 42 | 43 |
|---|---|---|---|---|
| 1 | 4.0 | 4.1 | 4.2 | 4.3 |
| 2 | 8.0 | 8.2 | 8.4 | 8.6 |
| 3 | 12.0 | 12.3 | 12.6 | 12.9 |
| 4 | 16.0 | 16.4 | 16.8 | 17.2 |
| 5 | 20.0 | 20.5 | 21.0 | 21.5 |
| 6 | 24.0 | 24.6 | 25.2 | 25.8 |
| 7 | 28.0 | 28.7 | 29.4 | 30.1 |
| 8 | 32.0 | 32.8 | 33.6 | 34.4 |
| 9 | 36.0 | 36.9 | 37.8 | 38.7 |

| | 44 | 45 | 46 | 47 |
|---|---|---|---|---|
| 1 | 4.4 | 4.5 | 4.6 | 4.7 |
| 2 | 8.8 | 9.0 | 9.2 | 9.4 |
| 3 | 13.2 | 13.5 | 13.8 | 14.1 |
| 4 | 17.6 | 18.0 | 18.4 | 18.8 |
| 5 | 22.0 | 22.5 | 23.0 | 23.5 |
| 6 | 26.4 | 27.0 | 27.6 | 28.2 |
| 7 | 30.8 | 31.5 | 32.2 | 32.9 |
| 8 | 35.2 | 36.0 | 36.8 | 37.6 |
| 9 | 39.6 | 40.5 | 41.4 | 42.3 |

| | 48 | 49 | 50 | 51 |
|---|---|---|---|---|
| 1 | 4.8 | 4.9 | 5.0 | 5.1 |
| 2 | 9.6 | 9.8 | 10.0 | 10.2 |
| 3 | 14.4 | 14.7 | 15.0 | 15.3 |
| 4 | 19.2 | 19.6 | 20.0 | 20.4 |
| 5 | 24.0 | 24.5 | 25.0 | 25.5 |
| 6 | 28.8 | 29.4 | 30.0 | 30.6 |
| 7 | 33.6 | 34.3 | 35.0 | 35.7 |
| 8 | 38.4 | 39.2 | 40.0 | 40.8 |
| 9 | 43.2 | 44.1 | 45.0 | 45.9 |

## Additions- und Subtractions-Logarithmen.

| A. | B 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.3 0103 | 0153 | 0203 | 0253 | 0303 | 0354 | 0404 | 0454 | 0505 | 0555 |
| 0.01 | 0606 | 0656 | 0707 | 0758 | 0809 | 0859 | 0910 | 0961 | 1012 | 1063 |
| 02 | 1115 | 1166 | 1217 | 1268 | 1320 | 1371 | 1422 | 1474 | 1526 | 1577 |
| 03 | 1629 | 1681 | 1732 | 1784 | 1836 | 1888 | 1940 | 1992 | 2045 | 2097 |
| 04 | 2149 | 2201 | 2254 | 2306 | 2359 | 2411 | 2464 | 2517 | 2569 | 2622 |
| 05 | 2675 | 2728 | 2781 | 2834 | 2887 | 2940 | 2993 | 3046 | 3100 | 3153 |
| 06 | 3207 | 3260 | 3314 | 3367 | 3421 | 3474 | 3528 | 3582 | 3636 | 3690 |
| 07 | 3744 | 3798 | 3852 | 3906 | 3960 | 4015 | 4069 | 4123 | 4178 | 4232 |
| 08 | 4287 | 4342 | 4396 | 4451 | 4506 | 4561 | 4616 | 4670 | 4726 | 4781 |
| 09 | 4836 | 4891 | 4946 | 5001 | 5057 | 5112 | 5168 | 5223 | 5279 | 5334 |
| 0.10 | 0.3 5390 | 5446 | 5502 | 5558 | 5614 | 5670 | 5726 | 5782 | 5838 | 5894 |
| 11 | 5950 | 6007 | 6063 | 6119 | 6176 | 6233 | 6289 | 6346 | 6403 | 6459 |
| 12 | 6516 | 6573 | 6630 | 6687 | 6744 | 6801 | 6858 | 6916 | 6973 | 7030 |
| 13 | 7088 | 7145 | 7203 | 7260 | 7318 | 7375 | 7433 | 7491 | 7549 | 7607 |
| 14 | 7665 | 7723 | 7781 | 7839 | 7897 | 7955 | 8014 | 8072 | 8130 | 8189 |
| 15 | 8247 | 8306 | 8365 | 8423 | 8482 | 8541 | 8600 | 8659 | 8718 | 8777 |
| 16 | 8836 | 8895 | 8954 | 9013 | 9073 | 9132 | 9191 | 9251 | 9310 | 9370 |
| 17 | 0.3 9430 | 9489 | 9549 | 9609 | 9669 | 9729 | 9789 | 9849 | 9909 | 9969 |
| 18 | 0.4 0029 | 0089 | 0149 | 0210 | 0270 | 0331 | 0391 | 0452 | 0512 | 0573 |
| 19 | 0634 | 0695 | 0756 | [illegible] | 0877 | 0938 | 0999 | 1061 | 1122 | 1183 |
| 0.20 | 0.4 1244 | 1306 | 1367 | 1428 | 1490 | 1552 | 1613 | 1675 | 1737 | 1798 |
| 21 | 1860 | 1922 | 1984 | 2046 | 2108 | 2170 | 2232 | 2294 | 2357 | 2419 |

Hier ist, wenn a > b

**für Summen**
wenn log a — log b = A
log (a + b) = log b + B

**für Differenzen**
wenn log a — log b = B
log (a — b) = log b + A.

## Subtractions-Logarithmen,

wenn die Differenz der gegebenen Logarithmen grösser als 0,42000 ist.

**Formel.**

Gegeben: log a und log b, wo log a > log b, so ist, wenn log a — log b = B gesetzt wird,
log (a — b) = log a + C — 10.

| B. | C. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.42 | 9.7 9226 | 9287 | 9348 | 9409 | 9469 | 9530 | 9590 | 9650 | 9709 | 9769 |
| 43 | 9.7 9828 | 9887 | 9946 | $\bar{0}$004 | $\bar{0}$063 | $\bar{0}$121 | $\bar{0}$179 | $\bar{0}$237 | $\bar{0}$294 | $\bar{0}$352 |
| 44 | 9.8 0409 | 0466 | 0522 | 0579 | 0635 | 0691 | 0747 | 0803 | 0858 | 0913 |
| 45 | 0969 | 1023 | 1078 | 1133 | 1187 | 1241 | 1295 | 1349 | 1402 | 1456 |
| 46 | 1509 | 1562 | 1615 | 1667 | 1720 | 1772 | 1824 | 1876 | 1928 | 1979 |
| 47 | 2030 | 2082 | 2133 | 2183 | 2234 | 2284 | 2335 | 2385 | 2435 | 2485 |
| 48 | 2534 | 2584 | 2633 | 2682 | 2731 | 2780 | 2828 | 2877 | 2925 | 2973 |
| 49 | 3021 | 3069 | 3116 | 3164 | 3211 | 3258 | 3305 | 3352 | 3398 | 3445 |
| 0.50 | 9.8 3491 | 3537 | 3583 | 3629 | 3675 | 3720 | 3766 | 3811 | 3856 | 3901 |

**P. P.**

| | 62 | 61 | 60 | 59 |
|---|---|---|---|---|
| 1 | 6.2 | 6.1 | 6.0 | 5.9 |
| 2 | 12.4 | 12.2 | 12.0 | 11.8 |
| 3 | 18.6 | 18.3 | 18.0 | 17.7 |
| 4 | 24.8 | 24.4 | 24.0 | 23.6 |
| 5 | 31.0 | 30.5 | 30.0 | 29.5 |
| 6 | 37.2 | 36.6 | 36.0 | 35.4 |
| 7 | 43.4 | 42.7 | 42.0 | 41.3 |
| 8 | 49.6 | 48.8 | 48.0 | 47.2 |
| 9 | 55.8 | 54.9 | 54.0 | 53.1 |

| | 58 | 57 | 56 | 55 |
|---|---|---|---|---|
| 1 | 5.8 | 5.7 | 5.6 | 5.5 |
| 2 | 11.6 | 11.4 | 11.2 | 11.0 |
| 3 | 17.4 | 17.1 | 16.8 | 16.5 |
| 4 | 23.2 | 22.8 | 22.4 | 22.0 |
| 5 | 29.0 | 28.5 | 28.0 | 27.5 |
| 6 | 34.8 | 34.2 | 33.6 | 33.0 |
| 7 | 40.6 | 39.9 | 39.2 | 38.5 |
| 8 | 46.4 | 45.6 | 44.8 | 44.0 |
| 9 | 52.2 | 51.3 | 50.4 | 49.5 |

| | 54 | 53 | 52 | 51 |
|---|---|---|---|---|
| 1 | 5.4 | 5.3 | 5.2 | 5.1 |
| 2 | 10.8 | 10.6 | 10.4 | 10.2 |
| 3 | 16.2 | 15.9 | 15.6 | 15.3 |
| 4 | 21.6 | 21.2 | 20.8 | 20.4 |
| 5 | 27.0 | 26.5 | 26.0 | 25.5 |
| 6 | 32.4 | 31.8 | 31.2 | 30.6 |
| 7 | 37.8 | 37.1 | 36.4 | 35.7 |
| 8 | 43.2 | 42.4 | 41.6 | 40.8 |
| 9 | 48.6 | 47.7 | 46.8 | 45.9 |

| | 50 | 49 | 48 | 47 |
|---|---|---|---|---|
| 1 | 5.0 | 4.9 | 4.8 | 4.7 |
| 2 | 10.0 | 9.8 | 9.6 | 9.4 |
| 3 | 15.0 | 14.7 | 14.4 | 14.1 |
| 4 | 20.0 | 19.6 | 19.2 | 18.8 |
| 5 | 25.0 | 24.5 | 24.0 | 23.5 |
| 6 | 30.0 | 29.4 | 28.8 | 28.2 |
| 7 | 35.0 | 34.3 | 33.6 | 32.9 |
| 8 | 40.0 | 39.2 | 38.4 | 37.6 |
| 9 | 45.0 | 44.1 | 43.2 | 42.3 |

| | 46 | 45 | 44 | 43 |
|---|---|---|---|---|
| 1 | 4.6 | 4.5 | 4.4 | 4.3 |
| 2 | 9.2 | 9.0 | 8.8 | 8.6 |
| 3 | 13.8 | 13.5 | 13.2 | 12.9 |
| 4 | 18.4 | 18.0 | 17.6 | 17.2 |
| 5 | 23.0 | 22.5 | 22.0 | 21.5 |
| 6 | 27.6 | 27.0 | 26.4 | 25.8 |
| 7 | 32.2 | 31.5 | 30.8 | 30.1 |
| 8 | 36.8 | 36.0 | 35.2 | 34.4 |
| 9 | 41.4 | 40.5 | 39.6 | 38.7 |

| | 42 | 41 | 40 | 39 |
|---|---|---|---|---|
| 1 | 4.2 | 4.1 | 4.0 | 3.9 |
| 2 | 8.4 | 8.2 | 8.0 | 7.8 |
| 3 | 12.6 | 12.3 | 12.0 | 11.7 |
| 4 | 16.8 | 16.4 | 16.0 | 15.6 |
| 5 | 21.0 | 20.5 | 20.0 | 19.5 |
| 6 | 25.2 | 24.6 | 24.0 | 23.4 |
| 7 | 29.4 | 28.7 | 28.0 | 27.3 |
| 8 | 33.6 | 32.8 | 32.0 | 31.2 |
| 9 | 37.8 | 36.9 | 36.0 | 35.1 |

## Subtractions - Logarithmen

| B. | C. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.50 | 9.8 3491 | 3537 | 3583 | 3629 | 3675 | 3720 | 3766 | 3811 | 3856 | 3901 |
| 51 | 3946 | 3991 | 4035 | 4079 | 4124 | 4168 | 4212 | 4255 | 4299 | 4343 |
| 52 | 4386 | 4429 | 4472 | 4515 | 4558 | 4600 | 4643 | 4685 | 4727 | 4770 |
| 53 | 4811 | 4853 | 4895 | 4936 | 4978 | 5019 | 5060 | 5101 | 5142 | 5183 |
| 54 | 5223 | 5264 | 5304 | 5344 | 5384 | 5424 | 5464 | 5504 | 5543 | 5583 |
| 55 | 5622 | 5661 | 5700 | 5739 | 5778 | 5817 | 5855 | 5894 | 5932 | 5970 |
| 56 | 6008 | 6046 | 6084 | 6122 | 6160 | 6197 | 6234 | 6272 | 6309 | 6346 |
| 57 | 6383 | 6419 | 6456 | 6493 | 6529 | 6565 | 6602 | 6638 | 6674 | 6709 |
| 58 | 6745 | 6781 | 6816 | 6852 | 6887 | 6922 | 6957 | 6992 | 7027 | 7062 |
| 59 | 7097 | 7131 | 7166 | 7200 | 7234 | 7268 | 7302 | 7336 | 7370 | 7404 |
| 0.60 | 9.8 7437 | 7471 | 7504 | 7537 | 7571 | 7604 | 7637 | 7670 | 7702 | 7735 |
| 61 | 7768 | 7800 | 7832 | 7865 | 7897 | 7929 | 7961 | 7993 | 8025 | 8056 |
| 62 | 8088 | 8120 | 8151 | 8182 | 8214 | 8245 | 8276 | 8307 | 8337 | 8368 |
| 63 | 8399 | 8429 | 8460 | 8490 | 8521 | 8551 | 8581 | 8611 | 8641 | 8671 |
| 64 | 8701 | 8730 | 8760 | 8789 | 8819 | 8848 | 8877 | 8906 | 8935 | 8964 |
| 65 | 8993 | 9022 | 9051 | 9079 | 9108 | 9136 | 9165 | 9193 | 9221 | 9250 |
| 66 | 9278 | 9306 | 9333 | 9361 | 9389 | 9417 | 9444 | 9472 | 9499 | 9526 |
| 67 | 9554 | 9581 | 9608 | 9635 | 9662 | 9688 | 9715 | 9742 | 9769 | 9795 |
| 68 | 9.8 9822 | 9848 | 9874 | 9900 | 9927 | 9953 | 9979 | 0005 | 0030 | 0056 |
| 69 | 9.9 0082 | 0107 | 0133 | 0158 | 0184 | 0209 | 0234 | 0260 | 0285 | 0310 |
| 0.70 | 9.9 0335 | 0360 | 0384 | 0409 | 0434 | 0458 | 0483 | 0507 | 0532 | 0556 |
| 71 | 0580 | 0605 | 0629 | 0653 | 0677 | 0701 | 0725 | 0748 | 0772 | 0796 |
| 72 | 0819 | 0843 | 0866 | 0890 | 0913 | 0936 | 0959 | 0982 | 1005 | 1028 |
| 73 | 1051 | 1074 | 1097 | 1120 | 1142 | 1165 | 1187 | 1210 | 1232 | 1255 |
| 74 | 1277 | 1299 | 1321 | 1343 | 1365 | 1387 | 1409 | 1431 | 1453 | 1475 |
| 75 | 1496 | 1518 | 1539 | 1561 | 1582 | 1604 | 1625 | 1646 | 1667 | 1689 |
| 76 | 1710 | 1731 | 1752 | 1772 | 1793 | 1814 | 1835 | 1855 | 1876 | 1897 |
| 77 | 1917 | 1937 | 1958 | 1978 | 1998 | 2019 | 2039 | 2059 | 2079 | 2099 |
| 78 | 2119 | 2139 | 2158 | 2178 | 2198 | 2218 | 2237 | 2257 | 2276 | 2296 |
| 79 | 2315 | 2334 | 2354 | 2373 | 2392 | 2411 | 2430 | 2449 | 2468 | 2487 |
| 0.80 | 9.9 2506 | 2525 | 2544 | 2562 | 2581 | 2599 | 2618 | 2637 | 2655 | 2673 |
| 81 | 2692 | 2710 | 2728 | 2747 | 2765 | 2783 | 2801 | 2819 | 2837 | 2855 |
| 82 | 2873 | 2890 | 2908 | 2926 | 2944 | 2961 | 2979 | 2996 | 3014 | 3031 |
| 83 | 3049 | 3066 | 3083 | 3100 | 3118 | 3135 | 3152 | 3169 | 3186 | 3203 |
| 84 | 3220 | 3237 | 3253 | 3270 | 3287 | 3304 | 3320 | 3337 | 3353 | 3370 |
| 85 | 3386 | 3403 | 3419 | 3436 | 3452 | 3468 | 3484 | 3501 | 3517 | 3533 |
| 86 | 3549 | 3565 | 3581 | 3597 | 3613 | 3628 | 3644 | 3660 | 3676 | 3691 |
| 87 | 3707 | 3722 | 3738 | 3753 | 3769 | 3784 | 3800 | 3815 | 3830 | 3845 |
| 88 | 3861 | 3876 | 3891 | 3906 | 3921 | 3936 | 3951 | 3966 | 3981 | 3996 |
| 89 | 4011 | 4025 | 4040 | 4055 | 4069 | 4084 | 4099 | 4113 | 4128 | 4142 |
| 0.90 | 9.9 4156 | 4171 | 4185 | 4200 | 4214 | 4228 | 4242 | 4256 | 4270 | 4285 |
| 91 | 4299 | 4313 | 4327 | 4341 | 4354 | 4368 | 4382 | 4396 | 4410 | 4423 |
| 92 | 4437 | 4451 | 4464 | 4478 | 4491 | 4505 | 4518 | 4532 | 4545 | 4559 |
| 93 | 4572 | 4585 | 4599 | 4612 | 4625 | 4638 | 4651 | 4664 | 4677 | 4690 |
| 94 | 4703 | 4716 | 4729 | 4742 | 4755 | 4768 | 4781 | 4793 | 4806 | 4819 |
| 95 | 4831 | 4844 | 4857 | 4869 | 4882 | 4894 | 4907 | 4919 | 4931 | 4944 |
| 96 | 4956 | 4968 | 4981 | 4993 | 5005 | 5017 | 5030 | 5042 | 5054 | 5066 |
| 97 | 5078 | 5090 | 5102 | 5114 | 5126 | 5137 | 5149 | 5161 | 5173 | 5185 |
| 98 | 5196 | 5208 | 5220 | 5231 | 5243 | 5254 | 5266 | 5277 | 5289 | 5300 |
| 99 | 5312 | 5323 | 5334 | 5346 | 5357 | 5368 | 5380 | 5391 | 5402 | 5413 |
| 1.00 | 9.9 5424 | 5435 | 5446 | 5457 | 5468 | 5479 | 5490 | 5501 | 5512 | 5523 |

**P. P.**

| | 88 | 87 | 86 | 85 |
|---|---|---|---|---|
| 1 | 3.8 | 3.7 | 3.6 | 3.5 |
| 2 | 7.6 | 7.4 | 7.2 | 7.0 |
| 3 | 11.4 | 11.1 | 10.8 | 10.5 |
| 4 | 15.2 | 14.8 | 14.4 | 14.0 |
| 5 | 19.0 | 18.5 | 18.0 | 17.5 |
| 6 | 22.8 | 22.2 | 21.6 | 21.0 |
| 7 | 26.6 | 25.9 | 25.2 | 24.5 |
| 8 | 30.4 | 29.6 | 28.8 | 28.0 |
| 9 | 34.2 | 33.3 | 32.4 | 31.5 |

| | 34 | 33 | 32 | 31 |
|---|---|---|---|---|
| 1 | 3.4 | 3.3 | 3.2 | 3.1 |
| 2 | 6.8 | 6.6 | 6.4 | 6.2 |
| 3 | 10.2 | 9.9 | 9.6 | 9.3 |
| 4 | 13.6 | 13.2 | 12.8 | 12.4 |
| 5 | 17.0 | 16.5 | 16.0 | 15.5 |
| 6 | 20.4 | 19.8 | 19.2 | 18.6 |
| 7 | 23.8 | 23.1 | 22.4 | 21.7 |
| 8 | 27.2 | 26.4 | 25.6 | 24.8 |
| 9 | 30.6 | 29.7 | 28.8 | 27.9 |

| | 30 | 29 | 28 | 27 |
|---|---|---|---|---|
| 1 | 3.0 | 2.9 | 2.8 | 2.7 |
| 2 | 6.0 | 5.8 | 5.6 | 5.4 |
| 3 | 9.0 | 8.7 | 8.4 | 8.1 |
| 4 | 12.0 | 11.6 | 11.2 | 10.8 |
| 5 | 15.0 | 14.5 | 14.0 | 13.5 |
| 6 | 18.0 | 17.4 | 16.8 | 16.2 |
| 7 | 21.0 | 20.3 | 19.6 | 18.9 |
| 8 | 24.0 | 23.2 | 22.4 | 21.6 |
| 9 | 27.0 | 26.1 | 25.2 | 24.3 |

| | 26 | 25 | 24 | 23 |
|---|---|---|---|---|
| 1 | 2.6 | 2.5 | 2.4 | 2.3 |
| 2 | 5.2 | 5.0 | 4.8 | 4.6 |
| 3 | 7.8 | 7.5 | 7.2 | 6.9 |
| 4 | 10.4 | 10.0 | 9.6 | 9.2 |
| 5 | 13.0 | 12.5 | 12.0 | 11.5 |
| 6 | 15.6 | 15.0 | 14.4 | 13.8 |
| 7 | 18.2 | 17.5 | 16.8 | 16.1 |
| 8 | 20.8 | 20.0 | 19.2 | 18.4 |
| 9 | 23.4 | 22.5 | 21.6 | 20.7 |

| | 22 | 21 | 20 | 19 |
|---|---|---|---|---|
| 1 | 2.2 | 2.1 | 2.0 | 1.9 |
| 2 | 4.4 | 4.2 | 4.0 | 3.8 |
| 3 | 6.6 | 6.3 | 6.0 | 5.7 |
| 4 | 8.8 | 8.4 | 8.0 | 7.6 |
| 5 | 11.0 | 10.5 | 10.0 | 9.5 |
| 6 | 13.2 | 12.6 | 12.0 | 11.4 |
| 7 | 15.4 | 14.7 | 14.0 | 13.3 |
| 8 | 17.6 | 16.8 | 16.0 | 15.2 |
| 9 | 19.8 | 18.9 | 18.0 | 17.1 |

| | 18 | 17 | 16 | 15 |
|---|---|---|---|---|
| 1 | 1.8 | 1.7 | 1.6 | 1.5 |
| 2 | 3.6 | 3.4 | 3.2 | 3.0 |
| 3 | 5.4 | 5.1 | 4.8 | 4.5 |
| 4 | 7.2 | 6.8 | 6.4 | 6.0 |
| 5 | 9.0 | 8.5 | 8.0 | 7.5 |
| 6 | 10.8 | 10.2 | 9.6 | 9.0 |
| 7 | 12.6 | 11.9 | 11.2 | 10.5 |
| 8 | 14.4 | 13.6 | 12.8 | 12.0 |
| 9 | 16.2 | 15.3 | 14.4 | 13.5 |

| | 14 | 13 | 12 | 11 |
|---|---|---|---|---|
| 1 | 1.4 | 1.3 | 1.2 | 1.1 |
| 2 | 2.8 | 2.6 | 2.4 | 2.2 |
| 3 | 4.2 | 3.9 | 3.6 | 3.3 |
| 4 | 5.6 | 5.2 | 4.8 | 4.4 |
| 5 | 7.0 | 6.5 | 6.0 | 5.5 |
| 6 | 8.4 | 7.8 | 7.2 | 6.6 |
| 7 | 9.8 | 9.1 | 8.4 | 7.7 |
| 8 | 11.2 | 10.4 | 9.6 | 8.8 |
| 9 | 12.6 | 11.7 | 10.8 | 9.9 |

## Subtractions - Logarithmen.

| B. | C. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.00 | 9.9 5424 | 5435 | 5446 | 5457 | 5468 | 5479 | 5490 | 5501 | 5512 | 5523 |
| 01 | 5534 | 5545 | 5556 | 5566 | 5577 | 5588 | 5598 | 5609 | 5620 | 5630 |
| 02 | 5641 | 5651 | 5662 | 5672 | 5683 | 5693 | 5704 | 5714 | 5725 | 5735 |
| 03 | 5745 | 5755 | 5766 | 5776 | 5786 | 5796 | 5806 | 5817 | 5827 | 5837 |
| 04 | 5847 | 5857 | 5867 | 5877 | 5887 | 5897 | 5907 | 5916 | 5926 | 5936 |
| 05 | 5946 | 5956 | 5965 | 5975 | 5985 | 5994 | 6004 | 6014 | 6023 | 6033 |
| 06 | 6042 | 6052 | 6062 | 6071 | 6080 | 6090 | 6099 | 6109 | 6118 | 6127 |
| 07 | 6137 | 6146 | 6155 | 6165 | 6174 | 6183 | 6192 | 6201 | 6210 | 6219 |
| 08 | 6229 | 6238 | 6247 | 6256 | 6265 | 6274 | 6283 | 6292 | 6300 | 6309 |
| 09 | 6318 | 6327 | 6336 | 6345 | 6353 | 6362 | 6371 | 6380 | 6388 | 6397 |
| 1.10 | 9.9 6406 | 6414 | 6423 | 6431 | 6440 | 6448 | 6457 | 6465 | 6474 | 6482 |
| 11 | 6491 | 6499 | 6508 | 6516 | 6524 | 6533 | 6541 | 6549 | 6557 | 6566 |
| 12 | 6574 | 6582 | 6590 | 6598 | 6607 | 6615 | 6623 | 6631 | 6639 | 6647 |
| 13 | 6655 | 6663 | 6671 | 6679 | 6687 | 6695 | 6703 | 6711 | 6718 | 6726 |
| 14 | 6734 | 6742 | 6750 | 6757 | 6765 | 6773 | 6781 | 6788 | 6796 | 6804 |
| 15 | 6811 | 6819 | 6826 | 6834 | 6841 | 6849 | 6857 | 6864 | 6872 | 6879 |
| 16 | 6886 | 6894 | 6901 | 6909 | 6916 | 6923 | 6931 | 6938 | 6945 | 6953 |
| 17 | 6960 | 6967 | 6974 | 6982 | 6989 | 6996 | 7003 | 7010 | 7017 | 7024 |
| 18 | 7031 | 7039 | 7046 | 7053 | 7060 | 7067 | 7074 | 7081 | 7088 | 7094 |
| 19 | 7101 | 7108 | 7115 | 7122 | 7129 | 7136 | 7142 | 7149 | 7156 | 7163 |
| 1.20 | 9.9 7170 | 7176 | 7183 | 7190 | 7196 | 7203 | 7210 | 7216 | 7223 | 7229 |
| 21 | 7236 | 7243 | 7249 | 7256 | 7262 | 7269 | 7275 | 7282 | 7288 | 7295 |
| 22 | 7301 | 7307 | 7314 | 7320 | 7326 | 7333 | 7339 | 7345 | 7352 | 7358 |
| 23 | 7364 | 7371 | 7377 | 7383 | 7389 | 7395 | 7402 | 7408 | 7414 | 7420 |
| 24 | 7426 | 7432 | 7438 | 7444 | 7450 | 7456 | 7462 | 7468 | 7474 | 7480 |
| 25 | 7486 | 7492 | 7498 | 7504 | 7510 | 7516 | 7522 | 7528 | 7534 | 7539 |
| 26 | 7545 | 7551 | 7557 | 7563 | 7568 | 7574 | 7580 | 7586 | 7591 | 7597 |
| 27 | 7603 | 7608 | 7614 | 7620 | 7625 | 7631 | 7637 | 7642 | 7648 | 7653 |
| 28 | 7659 | 7664 | 7670 | 7675 | 7681 | 7686 | 7692 | 7697 | 7703 | 7708 |
| 29 | 7714 | 7719 | 7724 | 7730 | 7735 | 7740 | 7746 | 7751 | 7756 | 7762 |
| 1.30 | 9.9 7767 | 7772 | 7777 | 7783 | 7788 | 7793 | 7798 | 7804 | 7809 | 7814 |
| 31 | 7819 | 7824 | 7829 | 7834 | 7840 | 7845 | 7850 | 7855 | 7860 | 7865 |
| 32 | 7870 | 7875 | 7880 | 7885 | 7890 | 7895 | 7900 | 7905 | 7910 | 7915 |
| 33 | 7920 | 7925 | 7929 | 7934 | 7939 | 7944 | 7949 | 7954 | 7958 | 7963 |
| 34 | 7968 | 7973 | 7978 | 7982 | 7987 | 7992 | 7997 | 8001 | 8006 | 8011 |
| 35 | 8015 | 8020 | 8025 | 8029 | 8034 | 8039 | 8043 | 8048 | 8052 | 8057 |
| 36 | 8062 | 8066 | 8071 | 8075 | 8080 | 8084 | 8089 | 8093 | 8098 | 8102 |
| 37 | 8107 | 8111 | 8116 | 8120 | 8124 | 8129 | 8133 | 8138 | 8142 | 8146 |
| 38 | 8151 | 8155 | 8159 | 8164 | 8168 | 8172 | 8177 | 8181 | 8185 | 8189 |
| 39 | 8194 | 8198 | 8202 | 8206 | 8211 | 8215 | 8219 | 8223 | 8227 | 8232 |
| 1.40 | 9.9 8236 | 8240 | 8244 | 8248 | 8252 | 8256 | 8260 | 8264 | 8269 | 8273 |
| 41 | 8277 | 8281 | 8285 | 8289 | 8293 | 8297 | 8301 | 8305 | 8309 | 8313 |
| 42 | 8317 | 8321 | 8325 | 8328 | 8332 | 8336 | 8340 | 8344 | 8348 | 8352 |
| 43 | 8356 | 8360 | 8363 | 8367 | 8371 | 8375 | 8379 | 8382 | 8386 | 8390 |
| 44 | 8394 | 8398 | 8401 | 8405 | 8409 | 8413 | 8416 | 8420 | 8424 | 8427 |
| 45 | 8431 | 8435 | 8438 | 8442 | 8446 | 8449 | 8453 | 8457 | 8460 | 8464 |
| 46 | 8467 | 8471 | 8475 | 8478 | 8482 | 8485 | 8489 | 8492 | 8496 | 8499 |
| 47 | 8503 | 8506 | 8510 | 8513 | 8517 | 8520 | 8524 | 8527 | 8531 | 8534 |
| 48 | 8538 | 8541 | 8544 | 8548 | 8551 | 8555 | 8558 | 8561 | 8565 | 8568 |
| 49 | 8571 | 8575 | 8578 | 8581 | 8585 | 8588 | 8591 | 8595 | 8598 | 8601 |
| 1.50 | 9.9 8604 | 8608 | 8611 | 8614 | 8617 | 8621 | 8624 | 8627 | 8630 | 8634 |

**P. P.**

| | 11 | 10 |
|---|---|---|
| 1 | 1.1 | 1.0 |
| 2 | 2.2 | 2.0 |
| 3 | 3.3 | 3.0 |
| 4 | 4.4 | 4.0 |
| 5 | 5.5 | 5.0 |
| 6 | 6.6 | 6.0 |
| 7 | 7.7 | 7.0 |
| 8 | 8.8 | 8.0 |
| 9 | 9.9 | 9.0 |

| | 9 |
|---|---|
| 1 | 0.9 |
| 2 | 1.8 |
| 3 | 2.7 |
| 4 | 3.6 |
| 5 | 4.5 |
| 6 | 5.4 |
| 7 | 6.3 |
| 8 | 7.2 |
| 9 | 8.1 |

| | 8 | 7 |
|---|---|---|
| 1 | 0.8 | 0.7 |
| 2 | 1.6 | 1.4 |
| 3 | 2.4 | 2.1 |
| 4 | 3.2 | 2.8 |
| 5 | 4.0 | 3.5 |
| 6 | 4.8 | 4.2 |
| 7 | 5.6 | 4.9 |
| 8 | 6.4 | 5.6 |
| 9 | 7.2 | 6.3 |

| | 6 |
|---|---|
| 1 | 0.6 |
| 2 | 1.2 |
| 3 | 1.8 |
| 4 | 2.4 |
| 5 | 3.0 |
| 6 | 3.6 |
| 7 | 4.2 |
| 8 | 4.8 |
| 9 | 5.4 |

| | 5 | 4 |
|---|---|---|
| 1 | 0.5 | 0.4 |
| 2 | 1.0 | 0.8 |
| 3 | 1.5 | 1.2 |
| 4 | 2.0 | 1.6 |
| 5 | 2.5 | 2.0 |
| 6 | 3.0 | 2.4 |
| 7 | 3.5 | 2.8 |
| 8 | 4.0 | 3.2 |
| 9 | 4.5 | 3.6 |

## Subtractions - Logarithmen.

| B. | C. 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.50 | 9.9 8604 | 8608 | 8611 | 8614 | 8617 | 8621 | 8624 | 8627 | 8630 | 8634 |
| 51 | 8637 | 8640 | 8643 | 8646 | 8649 | 8653 | 8656 | 8659 | 8662 | 8665 |
| 52 | 8668 | 8671 | 8674 | 8678 | 8681 | 8684 | 8687 | 8690 | 8693 | 8696 |
| 53 | 8699 | 8702 | 8705 | 8708 | 8711 | 8714 | 8717 | 8720 | 8723 | 8726 |
| 54 | 8729 | 8732 | 8735 | 8738 | 8741 | 8744 | 8747 | 8750 | 8753 | 8756 |
| 55 | 8758 | 8761 | 8764 | 8767 | 8770 | 8773 | 8776 | 8779 | 8781 | 8784 |
| 56 | 8787 | 8790 | 8793 | 8796 | 8798 | 8801 | 8804 | 8807 | 8810 | 8812 |
| 57 | 8815 | 8818 | 8821 | 8823 | 8826 | 8829 | 8832 | 8834 | 8837 | 8840 |
| 58 | 8842 | 8845 | 8848 | 8850 | 8853 | 8856 | 8858 | 8861 | 8864 | 8866 |
| 59 | 8869 | 8872 | 8874 | 8877 | 8880 | 8882 | 8885 | 8887 | 8890 | 8893 |
| 1.60 | 9.9 8895 | 8898 | 8900 | 8903 | 8905 | 8908 | 8911 | 8913 | 8916 | 8918 |
| 61 | 8921 | 8923 | 8926 | 8928 | 8931 | 8933 | 8936 | 8938 | 8941 | 8943 |
| 62 | 8946 | 8948 | 8950 | 8953 | 8955 | 8958 | 8960 | 8963 | 8965 | 8967 |
| 63 | 8970 | 8972 | 8975 | 8977 | 8979 | 8982 | 8984 | 8986 | 8989 | 8991 |
| 64 | 8994 | 8996 | 8998 | 9001 | 9003 | 9005 | 9007 | 9010 | 9012 | 9014 |
| 65 | 9017 | 9019 | 9021 | 9024 | 9026 | 9028 | 9030 | 9033 | 9035 | 9037 |
| 66 | 9039 | 9042 | 9044 | 9046 | 9048 | 9050 | 9053 | 9055 | 9057 | 9059 |
| 67 | 9061 | 9064 | 9066 | 9068 | 9070 | 9072 | 9074 | 9077 | 9079 | 9081 |
| 68 | 9083 | 9085 | 9087 | 9089 | 9092 | 9094 | 9096 | 9098 | 9100 | 9102 |
| 69 | 9104 | 9106 | 9108 | 9110 | 9112 | 9114 | 9117 | 9119 | 9121 | 9123 |
| 1.70 | 9.9 9125 | 9127 | 9129 | 9131 | 9133 | 9135 | 9137 | 9139 | 9141 | 9143 |
| 71 | 9145 | 9147 | 9149 | 9151 | 9153 | 9155 | 9157 | 9159 | 9161 | 9163 |
| 72 | 9164 | 9166 | 9168 | 9170 | 9172 | 9174 | 9176 | 9178 | 9180 | 9182 |
| 73 | 9184 | 9186 | 9187 | 9189 | 9191 | 9193 | 9195 | 9197 | 9199 | 9201 |
| 74 | 9202 | 9204 | 9206 | 9208 | 9210 | 9212 | 9213 | 9215 | 9217 | 9219 |
| 75 | 9221 | 9223 | 9224 | 9226 | 9228 | 9230 | 9232 | 9233 | 9235 | 9237 |
| 76 | 9239 | 9240 | 9242 | 9244 | 9246 | 9247 | 9249 | 9251 | 9253 | 9254 |
| 77 | 9256 | 9258 | 9260 | 9261 | 9263 | 9265 | 9266 | 9268 | 9270 | 9272 |
| 78 | 9273 | 9275 | 9277 | 9278 | 9280 | 9282 | 9283 | 9285 | 9287 | 9288 |
| 79 | 9290 | 9292 | 9293 | 9295 | 9296 | 9298 | 9300 | 9301 | 9303 | 9305 |
| 1.80 | 9.9 9306 | 9308 | 9309 | 9311 | 9313 | 9314 | 9316 | 9317 | 9319 | 9321 |
| 81 | 9322 | 9324 | 9325 | 9327 | 9328 | 9330 | 9331 | 9333 | 9335 | 9336 |
| 82 | 9338 | 9339 | 9341 | 9342 | 9344 | 9345 | 9347 | 9348 | 9350 | 9351 |
| 83 | 9353 | 9354 | 9356 | 9357 | 9359 | 9360 | 9362 | 9363 | 9365 | 9366 |
| 84 | 9368 | 9369 | 9371 | 9372 | 9374 | 9375 | 9376 | 9378 | 9379 | 9381 |
| 85 | 9382 | 9384 | 9385 | 9386 | 9388 | 9389 | 9391 | 9392 | 9394 | 9395 |
| 86 | 9396 | 9398 | 9399 | 9401 | 9402 | 9403 | 9405 | 9406 | 9407 | 9409 |
| 87 | 9410 | 9412 | 9413 | 9414 | 9416 | 9417 | 9418 | 9420 | 9421 | 9422 |
| 88 | 9424 | 9425 | 9426 | 9428 | 9429 | 9430 | 9432 | 9433 | 9434 | 9436 |
| 89 | 9437 | 9438 | 9439 | 9441 | 9442 | 9443 | 9445 | 9446 | 9447 | 9449 |
| 1.90 | 9.9 9450 | 9451 | 9452 | 9454 | 9455 | 9456 | 9457 | 9459 | 9460 | 9461 |
| 91 | 9462 | 9464 | 9465 | 9466 | 9467 | 9469 | 9470 | 9471 | 9472 | 9473 |
| 92 | 9475 | 9476 | 9477 | 9478 | 9480 | 9481 | 9482 | 9483 | 9484 | 9486 |
| 93 | 9487 | 9488 | 9489 | 9490 | 9491 | 9493 | 9494 | 9495 | 9496 | 9497 |
| 94 | 9498 | 9500 | 9501 | 9502 | 9503 | 9504 | 9505 | 9507 | 9508 | 9509 |
| 95 | 9510 | 9511 | 9512 | 9513 | 9514 | 9516 | 9517 | 9518 | 9519 | 9520 |
| 96 | 9521 | 9522 | 9523 | 9524 | 9526 | 9527 | 9528 | 9529 | 9530 | 9531 |
| 97 | 9532 | 9533 | 9534 | 9535 | 9536 | 9538 | 9539 | 9540 | 9541 | 9542 |
| 98 | 9543 | 9544 | 9545 | 9546 | 9547 | 9548 | 9549 | 9550 | 9551 | 9552 |
| 99 | 9553 | 9554 | 9555 | 9556 | 9557 | 9558 | 9559 | 9560 | 9561 | 9563 |
| 2.00 | 9.9 9564 | 9565 | 9566 | 9567 | 9568 | 9569 | 9570 | 9571 | 9572 | 9573 |

P. P.

| | 4 |
|---|---|
| 1 | 0.4 |
| 2 | 0.8 |
| 3 | 1.2 |
| 4 | 1.6 |
| 5 | 2.0 |
| 6 | 2.4 |
| 7 | 2.8 |
| 8 | 3.2 |
| 9 | 3.6 |

| | 3 |
|---|---|
| 1 | 0.3 |
| 2 | 0.6 |
| 3 | 0.9 |
| 4 | 1.2 |
| 5 | 1.5 |
| 6 | 1.8 |
| 7 | 2.1 |
| 8 | 2.4 |
| 9 | 2.7 |

| | 2 |
|---|---|
| 1 | 0.2 |
| 2 | 0.4 |
| 3 | 0.6 |
| 4 | 0.8 |
| 5 | 1.0 |
| 6 | 1.2 |
| 7 | 1.4 |
| 8 | 1.6 |
| 9 | 1.8 |



## Subtractions-Logarithmen.

| B. | C 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 9.9 9564 | 9574 | 9583 | 9593 | 9602 | 9611 | 9620 | 9629 | 9637 | 9646 |
| 1 | 9654 | 9662 | 9669 | 9677 | 9684 | 9691 | 9698 | 9705 | 9712 | 9719 |
| 2 | 9725 | 9731 | 9738 | 9744 | 9749 | 9755 | 9761 | 9766 | 9771 | 9777 |
| 3 | 9782 | 9787 | 9792 | 9796 | 9801 | 9806 | 9810 | 9814 | 9819 | 9823 |
| 4 | 9827 | 9831 | 9835 | 9838 | 9842 | 9846 | 9849 | 9853 | 9856 | 9859 |
| 5 | 9862 | 9866 | 9869 | 9872 | 9875 | 9877 | 9880 | 9883 | 9886 | 9888 |
| 6 | 9891 | 9893 | 9896 | 9898 | 9900 | 9903 | 9905 | 9907 | 9909 | 9911 |
| 7 | 9913 | 9915 | 9917 | 9919 | 9921 | 9923 | 9924 | 9926 | 9928 | 9930 |
| 8 | 9931 | 9933 | 9934 | 9936 | 9937 | 9939 | 9940 | 9941 | 9943 | 9944 |
| 9 | 9945 | 9947 | 9948 | 9949 | 9950 | 9951 | 9952 | 9953 | 9954 | 9956 |
| 3.0 | 9957 | 9958 | 9959 | 9959 | 9960 | 9961 | 9962 | 9963 | 9964 | 9965 |
| 3. | 9957 | 9965 | 9973 | 9978 | 9983 | 9986 | 9989 | 9991 | 9993 | 9995 |
| 4. | 9996 | 9997 | 9997 | 9998 | 9998 | 9999 | 9999 | 9999 | 9999 | 9999 |
| 5. | 0.0 0000 | | | | | | | | | |

P. P.

| | 9 | 8 | 7 | 6 |
|---|---|---|---|---|
| 1 | 0.9 | 0.8 | 0.7 | 0.6 |
| 2 | 1.8 | 1.6 | 1.4 | 1.2 |
| 3 | 2.7 | 2.4 | 2.1 | 1.8 |
| 4 | 3.6 | 3.2 | 2.8 | 2.4 |
| 5 | 4.5 | 4.0 | 3.5 | 3.0 |
| 6 | 5.4 | 4.8 | 4.2 | 3.6 |
| 7 | 6.3 | 5.6 | 4.9 | 4.2 |
| 8 | 7.2 | 6.4 | 5.6 | 4.8 |
| 9 | 8.1 | 7.2 | 6.3 | 5.4 |

| | 5 | 4 | 8 | 2 |
|---|---|---|---|---|
| 1 | 0.5 | 0.4 | 0.3 | 0.2 |
| 2 | 1.0 | 0.8 | 0.6 | 0.4 |
| 3 | 1.5 | 1.2 | 0.9 | 0.6 |
| 4 | 2.0 | 1.6 | 1.2 | 0.8 |
| 5 | 2.5 | 2.0 | 1.5 | 1.0 |
| 6 | 3.0 | 2.4 | 1.8 | 1.2 |
| 7 | 3.5 | 2.8 | 2.1 | 1.4 |
| 8 | 4.0 | 3.2 | 2.4 | 1.6 |
| 9 | 4.5 | 3.6 | 2.7 | 1.8 |

---

# TAFEL

DER

# QUADRATE

DER ZAHLEN

VON 0,000 BIS 3,500.

| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0. 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0000 | 0001 | 0001 |
| 01 | 0001 | 0001 | 0001 | 0002 | 0002 | 0002 | 0003 | 0003 | 0003 | 0004 |
| 02 | 0004 | 0004 | 0005 | 0005 | 0006 | 0006 | 0007 | 0007 | 0008 | 0008 |
| 03 | 0009 | 0010 | 0010 | 0011 | 0012 | 0012 | 0013 | 0014 | 0014 | 0015 |
| 04 | 0016 | 0017 | 0018 | 0018 | 0019 | 0020 | 0021 | 0022 | 0023 | 0024 |
| 05 | 0. 0025 | 0026 | 0027 | 0028 | 0029 | 0030 | 0031 | 0032 | 0034 | 0035 |
| 06 | 0036 | 0037 | 0038 | 0040 | 0041 | 0042 | 0044 | 0045 | 0046 | 0048 |
| 07 | 0049 | 0050 | 0052 | 0053 | 0055 | 0056 | 0058 | 0059 | 0061 | 0062 |
| 08 | 0064 | 0066 | 0067 | 0069 | 0071 | 0072 | 0074 | 0076 | 0077 | 0079 |
| 09 | 0081 | 0083 | 0085 | 0086 | 0088 | 0090 | 0092 | 0094 | 0096 | 0098 |
| 0.10 | 0. 0100 | 0102 | 0104 | 0106 | 0108 | 0110 | 0112 | 0114 | 0117 | 0119 |
| 11 | 0121 | 0123 | 0125 | 0128 | 0130 | 0132 | 0135 | 0137 | 0139 | 0142 |
| 12 | 0144 | 0146 | 0149 | 0151 | 0154 | 0156 | 0159 | 0161 | 0164 | 0166 |
| 13 | 0169 | 0172 | 0174 | 0177 | 0180 | 0182 | 0185 | 0188 | 0190 | 0193 |
| 14 | 0196 | 0199 | 0202 | 0204 | 0207 | 0210 | 0213 | 0216 | 0219 | 0222 |
| 15 | 0. 0225 | 0228 | 0231 | 0234 | 0237 | 0240 | 0243 | 0246 | 0250 | 0253 |
| 16 | 0256 | 0259 | 0262 | 0266 | 0269 | 0272 | 0276 | 0279 | 0282 | 0286 |
| 17 | 0289 | 0292 | 0296 | 0299 | 0303 | 0306 | 0310 | 0313 | 0317 | 0320 |
| 18 | 0324 | 0328 | 0331 | 0335 | 0339 | 0342 | 0346 | 0350 | 0353 | 0357 |
| 19 | 0361 | 0365 | 0369 | 0372 | 0376 | 0380 | 0384 | 0388 | 0392 | 0396 |
| 0.20 | 0. 0400 | 0404 | 0408 | 0412 | 0416 | 0420 | 0424 | 0428 | 0433 | 0437 |
| 21 | 0441 | 0445 | 0449 | 0454 | 0458 | 0462 | 0467 | 0471 | 0475 | 0480 |
| 22 | 0484 | 0488 | 0493 | 0497 | 0502 | 0506 | 0511 | 0515 | 0520 | 0524 |
| 23 | 0529 | 0534 | 0538 | 0543 | 0548 | 0552 | 0557 | 0562 | 0566 | 0571 |
| 24 | 0576 | 0581 | 0586 | 0590 | 0595 | 0600 | 0605 | 0610 | 0615 | 0620 |
| 25 | 0. 0625 | 0630 | 0635 | 0640 | 0645 | 0650 | 0655 | 0660 | 0666 | 0671 |
| 26 | 0676 | 0681 | 0686 | 0692 | 0697 | 0702 | 0708 | 0713 | 0718 | 0724 |
| 27 | 0729 | 0734 | 0740 | 0745 | 0751 | 0756 | 0762 | 0767 | 0773 | 0778 |
| 28 | 0784 | 0790 | 0795 | 0801 | 0807 | 0812 | 0818 | 0824 | 0829 | 0835 |
| 29 | 0841 | 0847 | 0853 | 0858 | 0864 | 0870 | 0876 | 0882 | 0888 | 0894 |
| 0.30 | 0. 0900 | 0906 | 0912 | 0918 | 0924 | 0930 | 0936 | 0942 | 0949 | 0955 |
| 31 | 0961 | 0967 | 0973 | 0980 | 0986 | 0992 | 0999 | 1005 | 1011 | 1018 |
| 32 | 1024 | 1030 | 1037 | 1043 | 1050 | 1056 | 1063 | 1069 | 1076 | 1082 |
| 33 | 1089 | 1096 | 1102 | 1109 | 1116 | 1122 | 1129 | 1136 | 1142 | 1149 |
| 34 | 1156 | 1163 | 1170 | 1176 | 1183 | 1190 | 1197 | 1204 | 1211 | 1218 |
| 35 | 0. 1225 | 1232 | 1239 | 1246 | 1253 | 1260 | 1267 | 1274 | 1282 | 1289 |
| 36 | 1296 | 1303 | 1310 | 1318 | 1325 | 1332 | 1340 | 1347 | 1354 | 1362 |
| 37 | 1369 | 1376 | 1384 | 1391 | 1399 | 1406 | 1414 | 1421 | 1429 | 1436 |
| 38 | 1444 | 1452 | 1459 | 1467 | 1475 | 1482 | 1490 | 1498 | 1505 | 1513 |
| 39 | 1521 | 1529 | 1537 | 1544 | 1552 | 1560 | 1568 | 1576 | 1584 | 1592 |
| 0.40 | 0. 1600 | 1608 | 1616 | 1624 | 1632 | 1640 | 1648 | 1656 | 1665 | 1673 |
| 41 | 1681 | 1689 | 1697 | 1706 | 1714 | 1722 | 1731 | 1739 | 1747 | 1756 |
| 42 | 1764 | 1772 | 1781 | 1789 | 1798 | 1806 | 1815 | 1823 | 1832 | 1840 |
| 43 | 1849 | 1858 | 1866 | 1875 | 1884 | 1892 | 1901 | 1910 | 1918 | 1927 |
| 44 | 1936 | 1945 | 1954 | 1962 | 1971 | 1980 | 1989 | 1998 | 2007 | 2016 |
| 45 | 0. 2025 | 2034 | 2043 | 2052 | 2061 | 2070 | 2079 | 2088 | 2098 | 2107 |
| 46 | 2116 | 2125 | 2134 | 2144 | 2153 | 2162 | 2172 | 2181 | 2190 | 2200 |
| 47 | 2209 | 2218 | 2228 | 2237 | 2247 | 2256 | 2266 | 2275 | 2285 | 2294 |
| 48 | 2304 | 2314 | 2323 | 2333 | 2343 | 2352 | 2362 | 2372 | 2381 | 2391 |
| 49 | 2401 | 2411 | 2421 | 2430 | 2440 | 2450 | 2460 | 2470 | 2480 | 2490 |
| 0.50 | 0. 2500 | 2510 | 2520 | 2530 | 2540 | 2550 | 2560 | 2570 | 2581 | 2591 |
| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

**P. P.**

| | 2 | 3 |
|---|---|---|
| 1 | 0.2 | 0.3 |
| 2 | 0.4 | 0.6 |
| 3 | 0.6 | 0.9 |
| 4 | 0.8 | 1.2 |
| 5 | 1.0 | 1.5 |
| 6 | 1.2 | 1.8 |
| 7 | 1.4 | 2.1 |
| 8 | 1.6 | 2.4 |
| 9 | 1.8 | 2.7 |

| | 4 | 5 |
|---|---|---|
| 1 | 0.4 | 0.5 |
| 2 | 0.8 | 1.0 |
| 3 | 1.2 | 1.5 |
| 4 | 1.6 | 2.0 |
| 5 | 2.0 | 2.5 |
| 6 | 2.4 | 3.0 |
| 7 | 2.8 | 3.5 |
| 8 | 3.2 | 4.0 |
| 9 | 3.6 | 4.5 |

| | 6 | 7 |
|---|---|---|
| 1 | 0.6 | 0.7 |
| 2 | 1.2 | 1.4 |
| 3 | 1.8 | 2.1 |
| 4 | 2.4 | 2.8 |
| 5 | 3.0 | 3.5 |
| 6 | 3.6 | 4.2 |
| 7 | 4.2 | 4.9 |
| 8 | 4.8 | 5.6 |
| 9 | 5.4 | 6.3 |

| | 8 | 9 |
|---|---|---|
| 1 | 0.8 | 0.9 |
| 2 | 1.6 | 1.8 |
| 3 | 2.4 | 2.7 |
| 4 | 3.2 | 3.6 |
| 5 | 4.0 | 4.5 |
| 6 | 4.8 | 5.4 |
| 7 | 5.6 | 6.3 |
| 8 | 6.4 | 7.2 |
| 9 | 7.2 | 8.1 |

| | 10 | 11 |
|---|---|---|
| 1 | 1.0 | 1.1 |
| 2 | 2.0 | 2.2 |
| 3 | 3.0 | 3.3 |
| 4 | 4.0 | 4.4 |
| 5 | 5.0 | 5.5 |
| 6 | 6.0 | 6.6 |
| 7 | 7.0 | 7.7 |
| 8 | 8.0 | 8.8 |
| 9 | 9.0 | 9.9 |

**P. P.**



| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.50 | 0. 2500 | 2510 | 2520 | 2530 | 2540 | 2550 | 2560 | 2570 | 2581 | 2591 |
| 51 | 2601 | 2611 | 2621 | 2632 | 2642 | 2652 | 2663 | 2673 | 2683 | 2694 |
| 52 | 2704 | 2714 | 2725 | 2735 | 2746 | 2756 | 2767 | 2777 | 2788 | 2798 |
| 53 | 2809 | 2820 | 2830 | 2841 | 2852 | 2862 | 2873 | 2884 | 2894 | 2905 |
| 54 | 2916 | 2927 | 2938 | 2948 | 2959 | 2970 | 2981 | 2992 | 3003 | 3014 |
| 55 | 0. 3025 | 3036 | 3047 | 3058 | 3069 | 3080 | 3091 | 3102 | 3114 | 3125 |
| 56 | 3136 | 3147 | 3158 | 3170 | 3181 | 3192 | 3204 | 3215 | 3226 | 3238 |
| 57 | 3249 | 3260 | 3272 | 3283 | 3295 | 3306 | 3318 | 3329 | 3341 | 3352 |
| 58 | 3364 | 3376 | 3387 | 3399 | 3411 | 3422 | 3434 | 3446 | 3457 | 3469 |
| 59 | 3481 | 3493 | 3505 | 3516 | 3528 | 3540 | 3552 | 3564 | 3576 | 3588 |
| 0.60 | 0. 3600 | 3612 | 3624 | 3636 | 3648 | 3660 | 3672 | 3684 | 3697 | 3709 |
| 61 | 3721 | 3733 | 3745 | 3758 | 3770 | 3782 | 3795 | 3807 | 3819 | 3832 |
| 62 | 3844 | 3856 | 3869 | 3881 | 3894 | 3906 | 3919 | 3931 | 3944 | 3956 |
| 63 | 3969 | 3982 | 3994 | 4007 | 4020 | 4032 | 4045 | 4058 | 4070 | 4083 |
| 64 | 4096 | 4109 | 4122 | 4134 | 4147 | 4160 | 4173 | 4186 | 4199 | 4212 |
| 65 | 0. 4225 | 4238 | 4251 | 4264 | 4277 | 4290 | 4303 | 4316 | 4330 | 4343 |
| 66 | 4356 | 4369 | 4382 | 4396 | 4409 | 4422 | 4436 | 4449 | 4462 | 4476 |
| 67 | 4489 | 4502 | 4516 | 4529 | 4543 | 4556 | 4570 | 4583 | 4597 | 4610 |
| 68 | 4624 | 4638 | 4651 | 4665 | 4679 | 4692 | 4706 | 4720 | 4733 | 4747 |
| 69 | 4761 | 4775 | 4789 | 4802 | 4816 | 4830 | 4844 | 4858 | 4872 | 4886 |
| 0.70 | 0. 4900 | 4914 | 4928 | 4942 | 4956 | 4970 | 4984 | 4998 | 5013 | 5027 |
| 71 | 5041 | 5055 | 5069 | 5084 | 5098 | 5112 | 5127 | 5141 | 5155 | 5170 |
| 72 | 5184 | 5198 | 5213 | 5227 | 5242 | 5256 | 5271 | 5285 | 5300 | 5314 |
| 73 | 5329 | 5344 | 5358 | 5373 | 5388 | 5402 | 5417 | 5432 | 5446 | 5461 |
| 74 | 5476 | 5491 | 5506 | 5520 | 5535 | 5550 | 5565 | 5580 | 5595 | 5610 |
| 75 | 0. 5625 | 5640 | 5655 | 5670 | 5685 | 5700 | 5715 | 5730 | 5746 | 5761 |
| 76 | 5776 | 5791 | 5806 | 5822 | 5837 | 5852 | 5868 | 5883 | 5898 | 5914 |
| 77 | 5929 | 5944 | 5960 | 5975 | 5991 | 6006 | 6022 | 6037 | 6053 | 6068 |
| 78 | 6084 | 6100 | 6115 | 6131 | 6147 | 6162 | 6178 | 6194 | 6209 | 6225 |
| 79 | 6241 | 6257 | 6273 | 6288 | 6304 | 6320 | 6336 | 6352 | 6368 | 6384 |
| 0.80 | 0. 6400 | 6416 | 6432 | 6448 | 6464 | 6480 | 6496 | 6512 | 6529 | 6545 |
| 81 | 6561 | 6577 | 6593 | 6610 | 6626 | 6642 | 6659 | 6675 | 6691 | 6708 |
| 82 | 6724 | 6740 | 6757 | 6773 | 6790 | 6806 | 6823 | 6839 | 6856 | 6872 |
| 83 | 6889 | 6906 | 6922 | 6939 | 6956 | 6972 | 6989 | 7006 | 7022 | 7039 |
| 84 | 7056 | 7073 | 7090 | 7106 | 7123 | 7140 | 7157 | 7174 | 7191 | 7208 |
| 85 | 0. 7225 | 7242 | 7259 | 7276 | 7293 | 7310 | 7327 | 7344 | 7362 | 7379 |
| 86 | 7396 | 7413 | 7430 | 7448 | 7465 | 7482 | 7500 | 7517 | 7534 | 7552 |
| 87 | 7569 | 7586 | 7604 | 7621 | 7639 | 7656 | 7674 | 7691 | 7709 | 7726 |
| 88 | 7744 | 7762 | 7779 | 7797 | 7815 | 7832 | 7850 | 7868 | 7885 | 7903 |
| 89 | 7921 | 7939 | 7957 | 7974 | 7992 | 8010 | 8028 | 8046 | 8064 | 8082 |
| 0.90 | 0. 8100 | 8118 | 8136 | 8154 | 8172 | 8190 | 8208 | 8226 | 8245 | 8263 |
| 91 | 8281 | 8299 | 8317 | 8336 | 8354 | 8372 | 8391 | 8409 | 8427 | 8446 |
| 92 | 8464 | 8482 | 8501 | 8519 | 8538 | 8556 | 8575 | 8593 | 8612 | 8630 |
| 93 | 8649 | 8668 | 8686 | 8705 | 8724 | 8742 | 8761 | 8780 | 8798 | 8817 |
| 94 | 8836 | 8855 | 8874 | 8892 | 8911 | 8930 | 8949 | 8968 | 8987 | 9006 |
| 95 | 0. 9025 | 9044 | 9063 | 9082 | 9101 | 9120 | 9139 | 9158 | 9178 | 9197 |
| 96 | 9216 | 9235 | 9254 | 9274 | 9293 | 9312 | 9332 | 9351 | 9370 | 9390 |
| 97 | 9409 | 9428 | 9448 | 9467 | 9487 | 9506 | 9526 | 9545 | 9565 | 9584 |
| 98 | 9604 | 9624 | 9643 | 9663 | 9683 | 9702 | 9722 | 9742 | 9761 | 9781 |
| 99 | 0. 9801 | 9821 | 9841 | 9860 | 9880 | 9900 | 9920 | 9940 | 9960 | 9980 |
| 1.00 | 1. 0000 | 0020 | 0040 | 0060 | 0080 | 0100 | 0120 | 0140 | 0161 | 0181 |
| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

P. P.

| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 | 2.1 |
| 2 | 2.0 | 2.2 | 2.4 | 2.6 | 2.8 | 3.0 | 3.2 | 3.4 | 3.6 | 3.8 | 4.0 | 4.2 |
| 3 | 3.0 | 3.3 | 3.6 | 3.9 | 4.2 | 4.5 | 4.8 | 5.1 | 5.4 | 5.7 | 6.0 | 6.3 |
| 4 | 4.0 | 4.4 | 4.8 | 5.2 | 5.6 | 6.0 | 6.4 | 6.8 | 7.2 | 7.6 | 8.0 | 8.4 |
| 5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 | 7.5 | 8.0 | 8.5 | 9.0 | 9.5 | 10.0 | 10.5 |
| 6 | 6.0 | 6.6 | 7.2 | 7.8 | 8.4 | 9.0 | 9.6 | 10.2 | 10.8 | 11.4 | 12.0 | 12.6 |
| 7 | 7.0 | 7.7 | 8.4 | 9.1 | 9.8 | 10.5 | 11.2 | 11.9 | 12.6 | 13.3 | 14.0 | 14.7 |
| 8 | 8.0 | 8.8 | 9.6 | 10.4 | 11.2 | 12.0 | 12.8 | 13.6 | 14.4 | 15.2 | 16.0 | 16.8 |
| 9 | 9.0 | 9.9 | 10.8 | 11.7 | 12.6 | 13.5 | 14.4 | 15.3 | 16.2 | 17.1 | 18.0 | 18.9 |

| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.00 | 1. 0000 | 0020 | 0040 | 0060 | 0080 | 0100 | 0120 | 0140 | 0161 | 0181 |
| 01 | 0201 | 0221 | 0241 | 0262 | 0282 | 0302 | 0323 | 0343 | 0363 | 0384 |
| 02 | 0404 | 0424 | 0445 | 0465 | 0486 | 0506 | 0527 | 0547 | 0568 | 0588 |
| 03 | 0609 | 0630 | 0650 | 0671 | 0692 | 0712 | 0733 | 0754 | 0774 | 0795 |
| 04 | 0816 | 0837 | 0858 | 0878 | 0899 | 0920 | 0941 | 0962 | 0983 | 1004 |
| 05 | 1. 1025 | 1046 | 1067 | 1088 | 1109 | 1130 | 1151 | 1172 | 1194 | 1215 |
| 06 | 1236 | 1257 | 1278 | 1300 | 1321 | 1342 | 1364 | 1385 | 1406 | 1428 |
| 07 | 1449 | 1470 | 1492 | 1513 | 1535 | 1556 | 1578 | 1599 | 1621 | 1642 |
| 08 | 1664 | 1686 | 1707 | 1729 | 1751 | 1772 | 1794 | 1816 | 1837 | 1859 |
| 09 | 1881 | 1903 | 1925 | 1946 | 1968 | 1990 | 2012 | 2034 | 2056 | 2078 |
| 1.10 | 1. 2100 | 2122 | 2144 | 2166 | 2188 | 2210 | 2232 | 2254 | 2277 | 2299 |
| 11 | 2321 | 2343 | 2365 | 2388 | 2410 | 2432 | 2455 | 2477 | 2499 | 2522 |
| 12 | 2544 | 2566 | 2589 | 2611 | 2634 | 2656 | 2679 | 2701 | 2724 | 2746 |
| 13 | 2769 | 2792 | 2814 | 2837 | 2860 | 2882 | 2905 | 2928 | 2950 | 2973 |
| 14 | 2996 | 3019 | 3042 | 3064 | 3087 | 3110 | 3133 | 3156 | 3179 | 3202 |
| 15 | 1. 3225 | 3248 | 3271 | 3294 | 3317 | 3340 | 3363 | 3386 | 3410 | 3433 |
| 16 | 3456 | 3479 | 3502 | 3526 | 3549 | 3572 | 3596 | 3619 | 3642 | 3666 |
| 17 | 3689 | 3712 | 3736 | 3759 | 3783 | 3806 | 3830 | 3853 | 3877 | 3900 |
| 18 | 3924 | 3948 | 3971 | 3995 | 4019 | 4042 | 4066 | 4090 | 4113 | 4137 |
| 19 | 4161 | 4185 | 4209 | 4232 | 4256 | 4280 | 4304 | 4328 | 4352 | 4376 |
| 1.20 | 1. 4400 | 4424 | 4448 | 4472 | 4496 | 4520 | 4544 | 4568 | 4593 | 4617 |
| 21 | 4641 | 4665 | 4689 | 4714 | 4738 | 4762 | 4787 | 4811 | 4835 | 4860 |
| 22 | 4884 | 4908 | 4933 | 4957 | 4982 | 5006 | 5031 | 5055 | 5080 | 5104 |
| 23 | 5129 | 5154 | 5178 | 5203 | 5228 | 5252 | 5277 | 5302 | 5326 | 5351 |
| 24 | 5376 | 5401 | 5426 | 5450 | 5475 | 5500 | 5525 | 5550 | 5575 | 5600 |
| 25 | 1. 5625 | 5650 | 5675 | 5700 | 5725 | 5750 | 5775 | 5800 | 5826 | 5851 |
| 26 | 5876 | 5901 | 5926 | 5952 | 5977 | 6002 | 6028 | 6053 | 6078 | 6104 |
| 27 | 6129 | 6154 | 6180 | 6205 | 6231 | 6256 | 6282 | 6307 | 6333 | 6358 |
| 28 | 6384 | 6410 | 6435 | 6461 | 6487 | 6512 | 6538 | 6564 | 6589 | 6615 |
| 29 | 6641 | 6667 | 6693 | 6718 | 6744 | 6770 | 6796 | 6822 | 6848 | 6874 |
| 1.30 | 1. 6900 | 6926 | 6952 | 6978 | 7004 | 7030 | 7056 | 7082 | 7109 | 7135 |
| 31 | 7161 | 7187 | 7213 | 7240 | 7266 | 7292 | 7319 | 7345 | 7371 | 7398 |
| 32 | 7424 | 7450 | 7477 | 7503 | 7530 | 7556 | 7583 | 7609 | 7636 | 7662 |
| 33 | 7689 | 7716 | 7742 | 7769 | 7796 | 7822 | 7849 | 7876 | 7902 | 7929 |
| 34 | 7956 | 7983 | 8010 | 8036 | 8063 | 8090 | 8117 | 8144 | 8171 | 8198 |
| 35 | 1. 8225 | 8252 | 8279 | 8306 | 8333 | 8360 | 8387 | 8414 | 8442 | 8469 |
| 36 | 8496 | 8523 | 8550 | 8578 | 8605 | 8632 | 8660 | 8687 | 8714 | 8742 |
| 37 | 8769 | 8796 | 8824 | 8851 | 8879 | 8906 | 8934 | 8961 | 8989 | 9016 |
| 38 | 9044 | 9072 | 9099 | 9127 | 9155 | 9182 | 9210 | 9238 | 9265 | 9293 |
| 39 | 9321 | 9349 | 9377 | 9404 | 9432 | 9460 | 9488 | 9516 | 9544 | 9572 |
| 1.40 | 1. 9600 | 9628 | 9656 | 9684 | 9712 | 9740 | 9768 | 9796 | 9825 | 9853 |
| 41 | 1. 9881 | 9909 | 9937 | 9966 | 9994 | 0̄022 | 0̄051 | 0̄079 | 0̄107 | 0̄136 |
| 42 | 2. 0164 | 0192 | 0221 | 0249 | 0278 | 0306 | 0335 | 0363 | 0392 | 0420 |
| 43 | 0449 | 0478 | 0506 | 0535 | 0564 | 0592 | 0621 | 0650 | 0678 | 0707 |
| 44 | 0736 | 0765 | 0794 | 0822 | 0851 | 0880 | 0909 | 0938 | 0967 | 0996 |
| 45 | 2. 1025 | 1054 | 1083 | 1112 | 1141 | 1170 | 1199 | 1228 | 1258 | 1287 |
| 46 | 1316 | 1345 | 1374 | 1404 | 1433 | 1462 | 1492 | 1521 | 1550 | 1580 |
| 47 | 1609 | 1638 | 1668 | 1697 | 1727 | 1756 | 1786 | 1815 | 1845 | 1874 |
| 48 | 1904 | 1934 | 1963 | 1993 | 2023 | 2052 | 2082 | 2112 | 2141 | 2171 |
| 49 | 2201 | 2231 | 2261 | 2290 | 2320 | 2350 | 2380 | 2410 | 2440 | 2470 |
| 1.50 | 2. 2500 | 2530 | 2560 | 2590 | 2620 | 2650 | 2680 | 2710 | 2741 | 2771 |
| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

P. P.

| | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.0 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 | 3.0 | 3.1 |
| 2 | 4.0 | 4.2 | 4.4 | 4.6 | 4.8 | 5.0 | 5.2 | 5.4 | 5.6 | 5.8 | 6.0 | 6.2 |
| 3 | 6.0 | 6.3 | 6.6 | 6.9 | 7.2 | 7.5 | 7.8 | 8.1 | 8.4 | 8.7 | 9.0 | 9.3 |
| 4 | 8.0 | 8.4 | 8.8 | 9.2 | 9.6 | 10.0 | 10.4 | 10.8 | 11.2 | 11.6 | 12.0 | 12.4 |
| 5 | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 12.5 | 13.0 | 13.5 | 14.0 | 14.5 | 15.0 | 15.5 |
| 6 | 12.0 | 12.6 | 13.2 | 13.8 | 14.4 | 15.0 | 15.6 | 16.2 | 16.8 | 17.4 | 18.0 | 18.6 |
| 7 | 14.0 | 14.7 | 15.4 | 16.1 | 16.8 | 17.5 | 18.2 | 18.9 | 19.6 | 20.3 | 21.0 | 21.7 |
| 8 | 16.0 | 16.8 | 17.6 | 18.4 | 19.2 | 20.0 | 20.8 | 21.6 | 22.4 | 23.2 | 24.0 | 24.8 |
| 9 | 18.0 | 18.9 | 19.8 | 20 7 | 21.6 | 22.5 | 23.4 | 24.3 | 25.2 | 26.1 | 27.0 | 27.9 |



| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.50 | 2. 2500 | 2530 | 2560 | 2590 | 2620 | 2650 | 2680 | 2710 | 2741 | 2771 |
| 51 | 2801 | 2831 | 2861 | 2892 | 2922 | 2952 | 2983 | 3013 | 3043 | 3074 |
| 52 | 3104 | 3134 | 3165 | 3195 | 3226 | 3256 | 3287 | 3317 | 3348 | 3378 |
| 53 | 3409 | 3440 | 3470 | 3501 | 3532 | 3562 | 3593 | 3624 | 3654 | 3685 |
| 54 | 3716 | 3747 | 3778 | 3808 | 3839 | 3870 | 3901 | 3932 | 3963 | 3994 |
| 55 | 2. 4025 | 4056 | 4087 | 4118 | 4149 | 4180 | 4211 | 4242 | 4274 | 4305 |
| 56 | 4336 | 4367 | 4398 | 4430 | 4461 | 4492 | 4524 | 4555 | 4586 | 4618 |
| 57 | 4649 | 4680 | 4712 | 4743 | 4775 | 4806 | 4838 | 4869 | 4901 | 4932 |
| 58 | 4964 | 4996 | 5027 | 5059 | 5091 | 5122 | 5154 | 5186 | 5217 | 5249 |
| 59 | 5281 | 5313 | 5345 | 5376 | 5408 | 5440 | 5472 | 5504 | 5536 | 5568 |
| 1.60 | 2. 5600 | 5632 | 5664 | 5696 | 5728 | 5760 | 5792 | 5824 | 5857 | 5889 |
| 61 | 5921 | 5953 | 5985 | 6018 | 6050 | 6082 | 6115 | 6147 | 6179 | 6212 |
| 62 | 6244 | 6276 | 6309 | 6341 | 6374 | 6406 | 6439 | 6471 | 6504 | 6536 |
| 63 | 6569 | 6602 | 6634 | 6667 | 6700 | 6732 | 6765 | 6798 | 6830 | 6863 |
| 64 | 6896 | 6929 | 6962 | 6994 | 7027 | 7060 | 7093 | 7126 | 7159 | 7192 |
| 65 | 2. 7225 | 7258 | 7291 | 7324 | 7357 | 7390 | 7423 | 7456 | 7490 | 7523 |
| 66 | 7556 | 7589 | 7622 | 7656 | 7689 | 7722 | 7756 | 7789 | 7822 | 7856 |
| 67 | 7889 | 7922 | 7956 | 7989 | 8023 | 8056 | 8090 | 8123 | 8157 | 8190 |
| 68 | 8224 | 8258 | 8291 | 8325 | 8359 | 8392 | 8426 | 8460 | 8493 | 8527 |
| 69 | 8561 | 8595 | 8629 | 8662 | 8696 | 8730 | 8764 | 8798 | 8832 | 8866 |
| 1.70 | 2. 8900 | 8934 | 8968 | 9002 | 9036 | 9070 | 9104 | 9138 | 9173 | 9207 |
| 71 | 9241 | 9275 | 9309 | 9344 | 9378 | 9412 | 9447 | 9481 | 9515 | 9550 |
| 72 | 9584 | 9618 | 9653 | 9687 | 9722 | 9756 | 9791 | 9825 | 9860 | 9894 |
| 73 | 2. 9929 | 9964 | 9998 | 0̄033 | 0̄068 | 0̄102 | 0̄137 | 0̄172 | 0̄206 | 0̄241 |
| 74 | 3. 0276 | 0311 | 0346 | 0380 | 0415 | 0450 | 0485 | 0520 | 0555 | 0590 |
| 75 | 3. 0625 | 0660 | 0695 | 0730 | 0765 | 0800 | 0835 | 0870 | 0906 | 0941 |
| 76 | 0976 | 1011 | 1046 | 1082 | 1117 | 1152 | 1188 | 1223 | 1258 | 1294 |
| 77 | 1329 | 1364 | 1400 | 1435 | 1471 | 1506 | 1542 | 1577 | 1613 | 1648 |
| 78 | 1684 | 1720 | 1755 | 1791 | 1827 | 1862 | 1898 | 1934 | 1969 | 2005 |
| 79 | 2041 | 2077 | 2113 | 2148 | 2184 | 2220 | 2256 | 2292 | 2328 | 2364 |
| 1.80 | 3. 2400 | 2436 | 2472 | 2508 | 2544 | 2580 | 2616 | 2652 | 2689 | 2725 |
| 81 | 2761 | 2797 | 2833 | 2870 | 2906 | 2942 | 2979 | 3015 | 3051 | 3088 |
| 82 | 3124 | 3160 | 3197 | 3233 | 3270 | 3306 | 3343 | 3379 | 3416 | 3452 |
| 83 | 3489 | 3526 | 3562 | 3599 | 3636 | 3672 | 3709 | 3746 | 3782 | 3819 |
| 84 | 3856 | 3893 | 3930 | 3966 | 4003 | 4040 | 4077 | 4114 | 4151 | 4188 |
| 85 | 3. 4225 | 4262 | 4299 | 4336 | 4373 | 4410 | 4447 | 4484 | 4522 | 4559 |
| 86 | 4596 | 4633 | 4670 | 4708 | 4745 | 4782 | 4820 | 4857 | 4894 | 4932 |
| 87 | 4969 | 5006 | 5044 | 5081 | 5119 | 5156 | 5194 | 5231 | 5269 | 5306 |
| 88 | 5344 | 5382 | 5419 | 5457 | 5495 | 5532 | 5570 | 5608 | 5645 | 5683 |
| 89 | 5721 | 5759 | 5797 | 5834 | 5872 | 5910 | 5948 | 5986 | 6024 | 6062 |
| 1.90 | 3. 6100 | 6138 | 6176 | 6214 | 6252 | 6290 | 6328 | 6366 | 6405 | 6443 |
| 91 | 6481 | 6519 | 6557 | 6596 | 6634 | 6672 | 6711 | 6749 | 6787 | 6826 |
| 92 | 6864 | 6902 | 6941 | 6979 | 7018 | 7056 | 7095 | 7133 | 7172 | 7210 |
| 93 | 7249 | 7288 | 7326 | 7365 | 7404 | 7442 | 7481 | 7520 | 7558 | 7597 |
| 94 | 7636 | 7675 | 7714 | 7752 | 7791 | 7830 | 7869 | 7908 | 7947 | 7986 |
| 95 | 3. 8025 | 8064 | 8103 | 8142 | 8181 | 8220 | 8259 | 8298 | 8338 | 8377 |
| 96 | 8416 | 8455 | 8494 | 8534 | 8573 | 8612 | 8652 | 8691 | 8730 | 8770 |
| 97 | 8809 | 8848 | 8888 | 8927 | 8967 | 9006 | 9046 | 9085 | 9125 | 9164 |
| 98 | 9204 | 9244 | 9283 | 9323 | 9363 | 9402 | 9442 | 9482 | 9521 | 9561 |
| 99 | 9601 | 9641 | 9681 | 9720 | 9760 | 9800 | 9840 | 9880 | 9920 | 9960 |
| 2.00 | 4. 0000 | 0040 | 0080 | 0120 | 0160 | 0200 | 0240 | 0280 | 0321 | 0361 |
| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

P. P.

| | 80 | 81 |
|---|---|---|
| 1 | 3.0 | 3.1 |
| 2 | 6.0 | 6.2 |
| 3 | 9.0 | 9.3 |
| 4 | 12.0 | 12.4 |
| 5 | 15.0 | 15.5 |
| 6 | 18.0 | 18.6 |
| 7 | 21.0 | 21.7 |
| 8 | 24.0 | 24.8 |
| 9 | 27.0 | 27.9 |
| | **82** | **83** |
| 1 | 3.2 | 3.3 |
| 2 | 6.4 | 6.6 |
| 3 | 9.6 | 9.9 |
| 4 | 12.8 | 13.2 |
| 5 | 16.0 | 16.5 |
| 6 | 19.2 | 19.8 |
| 7 | 22.4 | 23.1 |
| 8 | 25.6 | 26.4 |
| 9 | 28.8 | 29.7 |
| | **84** | **85** |
| 1 | 3.4 | 3.5 |
| 2 | 6.8 | 7.0 |
| 3 | 10.2 | 10.5 |
| 4 | 13.6 | 14.0 |
| 5 | 17.0 | 17.5 |
| 6 | 20.4 | 21.0 |
| 7 | 23.8 | 24.5 |
| 8 | 27.2 | 28.0 |
| 9 | 30.6 | 31.5 |
| | **36** | **87** |
| 1 | 3.6 | 3.7 |
| 2 | 7.2 | 7.4 |
| 3 | 10.8 | 11.1 |
| 4 | 14.4 | 14.8 |
| 5 | 18.0 | 18.5 |
| 6 | 21.6 | 22.2 |
| 7 | 25.2 | 25.9 |
| 8 | 28.8 | 29.6 |
| 9 | 32.4 | 33.3 |
| | **88** | **89** |
| 1 | 3.8 | 3.9 |
| 2 | 7.6 | 7.8 |
| 3 | 11.4 | 11.7 |
| 4 | 15.2 | 15.6 |
| 5 | 19.0 | 19.5 |
| 6 | 22.8 | 23.4 |
| 7 | 26.6 | 27.3 |
| 8 | 30.4 | 31.2 |
| 9 | 34.2 | 35.1 |
| | **40** | **41** |
| 1 | 4.0 | 4.1 |
| 2 | 8.0 | 8.2 |
| 3 | 12.0 | 12.3 |
| 4 | 16.0 | 16.4 |
| 5 | 20.0 | 20.5 |
| 6 | 24.0 | 24.6 |
| 7 | 28.0 | 28.7 |
| 8 | 32.0 | 32.8 |
| 9 | 36.0 | 36.9 |

P. P.

| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2.00 | 4. 0000 | 0040 | 0080 | 0120 | 0160 | 0200 | 0240 | 0280 | 0321 | 0361 |
| 01 | 0401 | 0441 | 0481 | 0522 | 0562 | 0602 | 0643 | 0683 | 0723 | 0764 |
| 02 | 0804 | 0844 | 0885 | 0925 | 0966 | 1006 | 1047 | 1087 | 1128 | 1168 |
| 03 | 1209 | 1250 | 1290 | 1331 | 1372 | 1412 | 1453 | 1494 | 1534 | 1575 |
| 04 | 1616 | 1657 | 1698 | 1738 | 1779 | 1820 | 1861 | 1902 | 1943 | 1984 |
| 05 | 4. 2025 | 2066 | 2107 | 2148 | 2189 | 2230 | 2271 | 2312 | 2354 | 2395 |
| 06 | 2436 | 2477 | 2518 | 2560 | 2601 | 2642 | 2684 | 2725 | 2766 | 2808 |
| 07 | 2849 | 2890 | 2932 | 2973 | 3015 | 3056 | 3098 | 3139 | 3181 | 3222 |
| 08 | 3264 | 3306 | 3347 | 3389 | 3431 | 3472 | 3514 | 3556 | 3597 | 3639 |
| 09 | 3681 | 3723 | 3765 | 3806 | 3848 | 3890 | 3932 | 3974 | 4016 | 4058 |
| 2.10 | 4. 4100 | 4142 | 4184 | 4226 | 4268 | 4310 | 4352 | 4394 | 4437 | 4479 |
| 11 | 4521 | 4563 | 4605 | 4648 | 4690 | 4732 | 4775 | 4817 | 4859 | 4902 |
| 12 | 4944 | 4986 | 5029 | 5071 | 5114 | 5156 | 5199 | 5241 | 5284 | 5326 |
| 13 | 5369 | 5412 | 5454 | 5497 | 5540 | 5582 | 5625 | 5668 | 5710 | 5753 |
| 14 | 5796 | 5839 | 5882 | 5924 | 5967 | 6010 | 6053 | 6096 | 6139 | 6182 |
| 15 | 4. 6225 | 6268 | 6311 | 6354 | 6397 | 6440 | 6483 | 6526 | 6570 | 6613 |
| 16 | 6656 | 6699 | 6742 | 6786 | 6829 | 6872 | 6916 | 6959 | 7002 | 7046 |
| 17 | 7089 | 7132 | 7176 | 7219 | 7263 | 7306 | 7350 | 7393 | 7437 | 7480 |
| 18 | 7524 | 7568 | 7611 | 7655 | 7699 | 7742 | 7786 | 7830 | 7873 | 7917 |
| 19 | 7961 | 8005 | 8049 | 8092 | 8136 | 8180 | 8224 | 8268 | 8312 | 8356 |
| 2.20 | 4. 8400 | 8444 | 8488 | 8532 | 8576 | 8620 | 8664 | 8708 | 8753 | 8797 |
| 21 | 8841 | 8885 | 8929 | 8974 | 9018 | 9062 | 9107 | 9151 | 9195 | 9240 |
| 22 | 9284 | 9328 | 9373 | 9417 | 9462 | 9506 | 9551 | 9595 | 9640 | 9684 |
| 23 | 4. 9729 | 9774 | 9818 | 9863 | 9908 | 9952 | 9997 | 0̄042 | 0̄086 | 0̄131 |
| 24 | 5. 0176 | 0221 | 0266 | 0310 | 0355 | 0400 | 0445 | 0490 | 0535 | 0580 |
| 25 | 5. 0625 | 0670 | 0715 | 0760 | 0805 | 0850 | 0895 | 0940 | 0986 | 1031 |
| 26 | 1076 | 1121 | 1166 | 1212 | 1257 | 1302 | 1348 | 1393 | 1438 | 1484 |
| 27 | 1529 | 1574 | 1620 | 1665 | 1711 | 1756 | 1802 | 1847 | 1893 | 1938 |
| 28 | 1984 | 2030 | 2075 | 2121 | 2167 | 2212 | 2258 | 2304 | 2349 | 2395 |
| 29 | 2441 | 2487 | 2533 | 2578 | 2624 | 2670 | 2716 | 2762 | 2808 | 2854 |
| 2.30 | 5. 2900 | 2946 | 2992 | 3038 | 3084 | 3130 | 3176 | 3222 | 3269 | 3315 |
| 31 | 3361 | 3407 | 3453 | 3500 | 3546 | 3592 | 3639 | 3685 | 3731 | 3778 |
| 32 | 3824 | 3870 | 3917 | 3963 | 4010 | 4056 | 4103 | 4149 | 4196 | 4242 |
| 33 | 4289 | 4336 | 4382 | 4429 | 4476 | 4522 | 4569 | 4616 | 4662 | 4709 |
| 34 | 4756 | 4803 | 4850 | 4896 | 4943 | 4990 | 5037 | 5084 | 5131 | 5178 |
| 35 | 5. 5225 | 5272 | 5319 | 5366 | 5413 | 5460 | 5507 | 5554 | 5602 | 5649 |
| 36 | 5696 | 5743 | 5790 | 5838 | 5885 | 5932 | 5980 | 6027 | 6074 | 6122 |
| 37 | 6169 | 6216 | 6264 | 6311 | 6359 | 6406 | 6454 | 6501 | 6549 | 6596 |
| 38 | 6644 | 6692 | 6739 | 6787 | 6835 | 6882 | 6930 | 6978 | 7025 | 7073 |
| 39 | 7121 | 7169 | 7217 | 7264 | 7312 | 7360 | 7408 | 7456 | 7504 | 7552 |
| 2.40 | 5. 7600 | 7648 | 7696 | 7744 | 7792 | 7840 | 7888 | 7936 | 7985 | 8033 |
| 41 | 8081 | 8129 | 8177 | 8226 | 8274 | 8322 | 8371 | 8419 | 8467 | 8516 |
| 42 | 8564 | 8612 | 8661 | 8709 | 8758 | 8806 | 8855 | 8903 | 8952 | 9000 |
| 43 | 9049 | 9098 | 9146 | 9195 | 9244 | 9292 | 9341 | 9390 | 9438 | 9487 |
| 44 | 5. 9536 | 9585 | 9634 | 9682 | 9731 | 9780 | 9829 | 9878 | 9927 | 9976 |
| 45 | 6. 0025 | 0074 | 0123 | 0172 | 0221 | 0270 | 0319 | 0368 | 0418 | 0467 |
| 46 | 0516 | 0565 | 0614 | 0664 | 0713 | 0762 | 0812 | 0861 | 0910 | 0960 |
| 47 | 1009 | 1058 | 1108 | 1157 | 1207 | 1256 | 1306 | 1355 | 1405 | 1454 |
| 48 | 1504 | 1554 | 1603 | 1653 | 1703 | 1752 | 1802 | 1852 | 1901 | 1951 |
| 49 | 2001 | 2051 | 2101 | 2150 | 2200 | 2250 | 2300 | 2350 | 2400 | 2450 |
| 2.50 | 6. 2500 | 2550 | 2600 | 2650 | 2700 | 2750 | 2800 | 2850 | 2901 | 2951 |
| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

P. P.

| | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.0 | 4.1 | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 | 4.7 | 4.8 | 4.9 | 5.0 | 5.1 |
| 2 | 8.0 | 8.2 | 8.4 | 8.6 | 8.8 | 9.0 | 9.2 | 9.4 | 9.6 | 9.8 | 10.0 | 10.2 |
| 3 | 12.0 | 12.3 | 12.6 | 12.9 | 13.2 | 13.5 | 13.8 | 14.1 | 14.4 | 14.7 | 15.0 | 15.3 |
| 4 | 16.0 | 16.4 | 16.8 | 17.2 | 17.6 | 18.0 | 18.4 | 18.8 | 19.2 | 19.6 | 20.0 | 20.4 |
| 5 | 20.0 | 20.5 | 21.0 | 21.5 | 22.0 | 22.5 | 23.0 | 23.5 | 24.0 | 24.5 | 25.0 | 25.5 |
| 6 | 24.0 | 24.6 | 25.2 | 25.8 | 26.4 | 27.0 | 27.6 | 28.2 | 28.8 | 29.4 | 30.0 | 30.6 |
| 7 | 28.0 | 28.7 | 29.4 | 30.1 | 30.8 | 31.5 | 32.2 | 32.9 | 33.6 | 34.3 | 35.0 | 35.7 |
| 8 | 32.0 | 32.8 | 33.6 | 34.4 | 35.2 | 36.0 | 36.8 | 37.6 | 38.4 | 39.2 | 40.0 | 40.8 |
| 9 | 36.0 | 36.9 | 37.8 | 38.7 | 39.6 | 40.5 | 41.4 | 42.3 | 43.2 | 44.1 | 45.0 | 45.9 |

P. P.

| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2.50 | 6. 2500 | 2550 | 2600 | 2650 | 2700 | 2750 | 2800 | 2850 | 2901 | 2951 |
| 51 | 3001 | 3051 | 3161 | 3152 | 3202 | 3252 | 3303 | 3353 | 3403 | 3454 |
| 52 | 3504 | 3554 | 3605 | 3655 | 3706 | 3756 | 3807 | 3857 | 3908 | 3958 |
| 53 | 4009 | 4060 | 4110 | 4161 | 4212 | 4262 | 4313 | 4364 | 4414 | 4465 |
| 54 | 4516 | 4567 | 4618 | 4668 | 4719 | 4770 | 4821 | 4872 | 4923 | 4974 |
| 55 | 6. 5025 | 5076 | 5127 | 5178 | 5229 | 5280 | 5331 | 5382 | 5434 | 5485 |
| 56 | 5536 | 5587 | 5638 | 5690 | 5741 | 5792 | 5844 | 5895 | 5946 | 5998 |
| 57 | 6049 | 6100 | 6152 | 6203 | 6255 | 6306 | 6358 | 6409 | 6461 | 6512 |
| 58 | 6564 | 6616 | 6667 | 6719 | 6771 | 6822 | 6874 | 6926 | 6977 | 7029 |
| 59 | 7081 | 7133 | 7185 | 7236 | 7288 | 7340 | 7392 | 7444 | 7496 | 7548 |
| 2.60 | 6. 7600 | 7652 | 7704 | 7756 | 7808 | 7860 | 7912 | 7964 | 8017 | 8069 |
| 61 | 8121 | 8173 | 8225 | 8278 | 8330 | 8382 | 8435 | 8487 | 8539 | 8592 |
| 62 | 8644 | 8696 | 8749 | 8801 | 8854 | 8906 | 8959 | 9011 | 9064 | 9116 |
| 63 | 9169 | 9222 | 9274 | 9327 | 9380 | 9432 | 9485 | 9538 | 9590 | 9643 |
| 64 | 6. 9696 | 9749 | 9802 | 9854 | 9907 | 9960 | 0̄013 | 0̄066 | 0̄119 | 0̄172 |
| 65 | 7. 0225 | 0278 | 0331 | 0384 | 0437 | 0490 | 0543 | 0596 | 0650 | 0703 |
| 66 | 0756 | 0809 | 0862 | 0916 | 0969 | 1022 | 1076 | 1129 | 1182 | 1236 |
| 67 | 1289 | 1342 | 1396 | 1449 | 1503 | 1556 | 1610 | 1663 | 1717 | 1770 |
| 68 | 1824 | 1878 | 1931 | 1985 | 2039 | 2092 | 2146 | 2200 | 2253 | 2307 |
| 69 | 2361 | 2415 | 2469 | 2522 | 2576 | 2630 | 2684 | 2738 | 2792 | 2846 |
| 2.70 | 7. 2900 | 2954 | 3008 | 3062 | 3116 | 3170 | 3224 | 3278 | 3333 | 3387 |
| 71 | 3441 | 3495 | 3549 | 3604 | 3658 | 3712 | 3767 | 3821 | 3875 | 3930 |
| 72 | 3984 | 4038 | 4093 | 4147 | 4202 | 4256 | 4311 | 4365 | 4420 | 4474 |
| 73 | 4529 | 4584 | 4638 | 4693 | 4748 | 4802 | 4857 | 4912 | 4966 | 5021 |
| 74 | 5076 | 5131 | 5186 | 5240 | 5295 | 5350 | 5405 | 5460 | 5515 | 5570 |
| 75 | 7. 5625 | 5680 | 5735 | 5790 | 5845 | 5900 | 5955 | 6010 | 6066 | 6121 |
| 76 | 6176 | 6231 | 6286 | 6342 | 6397 | 6452 | 6508 | 6563 | 6618 | 6674 |
| 77 | 6729 | 6784 | 6840 | 6895 | 6951 | 7006 | 7062 | 7117 | 7173 | 7228 |
| 78 | 7284 | 7340 | 7395 | 7451 | 7507 | 7562 | 7618 | 7674 | 7729 | 7785 |
| 79 | 7841 | 7897 | 7953 | 8008 | 8064 | 8120 | 8176 | 8232 | 8288 | 8344 |
| 2.80 | 7. 8400 | 8456 | 8512 | 8568 | 8624 | 8680 | 8736 | 8792 | 8849 | 8905 |
| 81 | 8961 | 9017 | 9073 | 9130 | 9186 | 9242 | 9299 | 9355 | 9411 | 9468 |
| 82 | 7. 9524 | 9580 | 9637 | 9693 | 9750 | 9806 | 9863 | 9919 | 9976 | 0̄032 |
| 83 | 8. 0089 | 0146 | 0202 | 0259 | 0316 | 0372 | 0429 | 0486 | 0542 | 0599 |
| 84 | 0656 | 0713 | 0770 | 0826 | 0883 | 0940 | 0997 | 1054 | 1111 | 1168 |
| 85 | 8. 1225 | 1282 | 1339 | 1396 | 1453 | 1510 | 1567 | 1624 | 1682 | 1739 |
| 86 | 1796 | 1853 | 1910 | 1968 | 2025 | 2082 | 2140 | 2197 | 2254 | 2312 |
| 87 | 2369 | 2426 | 2484 | 2541 | 2599 | 2656 | 2714 | 2771 | 2829 | 2886 |
| 88 | 2944 | 3002 | 3059 | 3117 | 3175 | 3232 | 3290 | 3348 | 3405 | 3463 |
| 89 | 3521 | 3579 | 3637 | 3694 | 3752 | 3810 | 3868 | 3926 | 3984 | 4042 |
| 2.90 | 8. 4100 | 4158 | 4216 | 4274 | 4332 | 4390 | 4448 | 4506 | 4565 | 4623 |
| 91 | 4681 | 4739 | 4797 | 4856 | 4914 | 4972 | 5031 | 5089 | 5147 | 5206 |
| 92 | 5264 | 5322 | 5381 | 5439 | 5498 | 5556 | 5615 | 5673 | 5732 | 5790 |
| 93 | 5849 | 5908 | 5966 | 6025 | 6084 | 6142 | 6201 | 6260 | 6318 | 6377 |
| 94 | 6436 | 6495 | 6554 | 6612 | 6671 | 6730 | 6789 | 6848 | 6907 | 6966 |
| 95 | 8. 7025 | 7084 | 7143 | 7202 | 7261 | 7320 | 7379 | 7438 | 7498 | 7557 |
| 96 | 7616 | 7675 | 7734 | 7794 | 7853 | 7912 | 7972 | 8031 | 8090 | 8150 |
| 97 | 8209 | 8268 | 8328 | 8387 | 8447 | 8506 | 8566 | 8625 | 8685 | 8744 |
| 98 | 8804 | 8864 | 8923 | 8983 | 9043 | 9102 | 9162 | 9222 | 9281 | 9341 |
| 99 | 8. 9401 | 9461 | 9521 | 9580 | 9640 | 9700 | 9760 | 9820 | 9880 | 9940 |
| 3.00 | 9. 0000 | 0060 | 0120 | 0180 | 0240 | 0300 | 0360 | 0420 | 0481 | 0541 |
| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

**P. P.**

| | 50 | 51 | | 52 | 53 | | 54 | 55 |
|---|---|---|---|---|---|---|---|---|
| 1 | 5.0 | 5.1 | 1 | 5.2 | 5.3 | 1 | 5.4 | 5.5 |
| 2 | 10.0 | 10.2 | 2 | 10.4 | 10.6 | 2 | 10.8 | 11.0 |
| 3 | 15.0 | 15.3 | 3 | 15.6 | 15.9 | 3 | 16.2 | 16.5 |
| 4 | 20.0 | 20.4 | 4 | 20.8 | 21.2 | 4 | 21.6 | 22.0 |
| 5 | 25.0 | 25.5 | 5 | 26.0 | 26.5 | 5 | 27.0 | 27.5 |
| 6 | 30.0 | 30.6 | 6 | 31.2 | 31.8 | 6 | 32.4 | 33.0 |
| 7 | 35.0 | 35.7 | 7 | 36.4 | 37.1 | 7 | 37.8 | 38.5 |
| 8 | 40.0 | 40.8 | 8 | 41.6 | 42.4 | 8 | 43.2 | 44.0 |
| 9 | 45.0 | 45.9 | 9 | 46.8 | 47.7 | 9 | 48.6 | 49.5 |

| | 56 | 57 | | 58 | 59 | | 60 | 61 |
|---|---|---|---|---|---|---|---|---|
| 1 | 5.6 | 5.7 | 1 | 5.8 | 5.9 | 1 | 6.0 | 6.1 |
| 2 | 11.2 | 11.4 | 2 | 11.6 | 11.8 | 2 | 12.0 | 12.2 |
| 3 | 16.8 | 17.1 | 3 | 17.4 | 17.7 | 3 | 18.0 | 18.3 |
| 4 | 22.4 | 22.8 | 4 | 23.2 | 23.6 | 4 | 24.0 | 24.4 |
| 5 | 28.0 | 28.5 | 5 | 29.0 | 29.5 | 5 | 30.0 | 30.5 |
| 6 | 33.6 | 34.2 | 6 | 34.8 | 35.4 | 6 | 36.0 | 36.6 |
| 7 | 39.2 | 39.9 | 7 | 40.6 | 41.3 | 7 | 42.0 | 42.7 |
| 8 | 44.8 | 45.6 | 8 | 46.4 | 47.2 | 8 | 48.0 | 48.8 |
| 9 | 50.4 | 51.3 | 9 | 52.2 | 53.1 | 9 | 54.0 | 54.9 |

| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 3.00 | 9. 0000 | 0060 | 0120 | 0180 | 0240 | 0300 | 0360 | 0420 | 0481 | 0541 |
| 01 | 0601 | 0661 | 0721 | 0782 | 0842 | 0902 | 0963 | 1023 | 1083 | 1144 |
| 02 | 1204 | 1264 | 1325 | 1385 | 1446 | 1506 | 1567 | 1627 | 1688 | 1748 |
| 03 | 1809 | 1870 | 1930 | 1991 | 2052 | 2112 | 2173 | 2234 | 2294 | 2355 |
| 04 | 2416 | 2477 | 2538 | 2598 | 2659 | 2720 | 2781 | 2842 | 2903 | 2964 |
| 05 | 9. 3025 | 3086 | 3147 | 3208 | 3269 | 3330 | 3391 | 3452 | 3514 | 3575 |
| 06 | 3636 | 3697 | 3758 | 3820 | 3881 | 3942 | 4004 | 4065 | 4126 | 4188 |
| 07 | 4249 | 4310 | 4372 | 4433 | 4495 | 4556 | 4618 | 4679 | 4741 | 4802 |
| 08 | 4864 | 4926 | 4987 | 5049 | 5111 | 5172 | 5234 | 5296 | 5357 | 5419 |
| 09 | 5481 | 5543 | 5605 | 5666 | 5728 | 5790 | 5852 | 5914 | 5976 | 6038 |
| 3.10 | 9. 6100 | 6162 | 6224 | 6286 | 6348 | 6410 | 6472 | 6534 | 6597 | 6659 |
| 11 | 6721 | 6783 | 6845 | 6908 | 6970 | 7032 | 7095 | 7157 | 7219 | 7282 |
| 12 | 7344 | 7406 | 7469 | 7531 | 7594 | 7656 | 7719 | 7781 | 7844 | 7906 |
| 13 | 7969 | 8032 | 8094 | 8157 | 8220 | 8282 | 8345 | 8408 | 8470 | 8533 |
| 14 | 8596 | 8659 | 8722 | 8784 | 8847 | 8910 | 8973 | 9036 | 9099 | 9162 |
| 15 | 9. 9225 | 9288 | 9351 | 9414 | 9477 | 9540 | 9603 | 9666 | 9730 | 9793 |
| 16 | 9. 9856 | 9919 | 9982 | $\bar{0}$046 | $\bar{0}$109 | $\bar{0}$172 | $\bar{0}$236 | $\bar{0}$299 | $\bar{0}$362 | $\bar{0}$426 |
| 17 | 10. 0489 | 0552 | 0616 | 0679 | 0743 | 0806 | 0870 | 0933 | 0997 | 1060 |
| 18 | 1124 | 1188 | 1251 | 1315 | 1379 | 1442 | 1506 | 1570 | 1633 | 1697 |
| 19 | 1761 | 1825 | 1889 | 1952 | 2016 | 2080 | 2144 | 2208 | 2272 | 2336 |
| 3.20 | 10. 2400 | 2464 | 2528 | 2592 | 2656 | 2720 | 2784 | 2848 | 2913 | 2977 |
| 21 | 3041 | 3105 | 3169 | 3234 | 3298 | 3362 | 3427 | 3491 | 3555 | 3620 |
| 22 | 3684 | 3748 | 3813 | 3877 | 3942 | 4006 | 4071 | 4135 | 4200 | 4264 |
| 23 | 4329 | 4394 | 4458 | 4523 | 4588 | 4652 | 4717 | 4782 | 4846 | 4911 |
| 24 | 4976 | 5041 | 5106 | 5170 | 5235 | 5300 | 5365 | 5430 | 5495 | 5560 |
| 25 | 10. 5625 | 5690 | 5755 | 5820 | 5885 | 5950 | 6015 | 6080 | 6146 | 6211 |
| 26 | 6276 | 6341 | 6406 | 6472 | 6537 | 6602 | 6668 | 6733 | 6798 | 6864 |
| 27 | 6929 | 6994 | 7060 | 7125 | 7191 | 7256 | 7322 | 7387 | 7453 | 7518 |
| 28 | 7584 | 7650 | 7715 | 7781 | 7847 | 7912 | 7978 | 8044 | 8109 | 8175 |
| 29 | 8241 | 8307 | 8373 | 8438 | 8504 | 8570 | 8636 | 8702 | 8768 | 8834 |
| 3.30 | 10. 8900 | 8966 | 9032 | 9098 | 9164 | 9230 | 9296 | 9362 | 9429 | 9495 |
| 31 | 10. 9561 | 9627 | 9693 | 9760 | 9826 | 9892 | 9959 | $\bar{0}$025 | $\bar{0}$091 | $\bar{0}$158 |
| 32 | 11. 0224 | 0290 | 0357 | 0423 | 0490 | 0556 | 0623 | 0689 | 0756 | 0822 |
| 33 | 0889 | 0956 | 1022 | 1089 | 1156 | 1222 | 1289 | 1356 | 1422 | 1489 |
| 34 | 1556 | 1623 | 1690 | 1756 | 1823 | 1890 | 1957 | 2024 | 2091 | 2158 |
| 35 | 11. 2225 | 2292 | 2359 | 2426 | 2493 | 2560 | 2627 | 2694 | 2762 | 2829 |
| 36 | 2896 | 2963 | 3030 | 3098 | 3165 | 3232 | 3300 | 3367 | 3434 | 3502 |
| 37 | 3569 | 3636 | 3704 | 3771 | 3839 | 3906 | 3974 | 4041 | 4109 | 4176 |
| 38 | 4244 | 4312 | 4379 | 4447 | 4515 | 4582 | 4650 | 4718 | 4785 | 4853 |
| 39 | 4921 | 4989 | 5057 | 5124 | 5192 | 5260 | 5328 | 5396 | 5464 | 5532 |
| 3.40 | 11. 5600 | 5668 | 5736 | 5804 | 5872 | 5940 | 6008 | 6076 | 6145 | 6213 |
| 41 | 6281 | 6349 | 6417 | 6486 | 6554 | 6622 | 6691 | 6759 | 6827 | 6896 |
| 42 | 6964 | 7032 | 7101 | 7169 | 7238 | 7306 | 7375 | 7443 | 7512 | 7580 |
| 43 | 7649 | 7718 | 7786 | 7855 | 7924 | 7992 | 8061 | 8130 | 8198 | 8267 |
| 44 | 8336 | 8405 | 8474 | 8542 | 8611 | 8680 | 8749 | 8818 | 8887 | 8956 |
| 45 | 11. 9025 | 9094 | 9163 | 9232 | 9301 | 9370 | 9439 | 9508 | 9578 | 9647 |
| 46 | 11. 9716 | 9785 | 9854 | 9924 | 9993 | $\bar{0}$062 | $\bar{0}$132 | $\bar{0}$201 | $\bar{0}$270 | $\bar{0}$340 |
| 47 | 12. 0409 | 0478 | 0548 | 0617 | 0687 | 0756 | 0826 | 0895 | 0965 | 1034 |
| 48 | 1104 | 1174 | 1243 | 1313 | 1383 | 1452 | 1522 | 1592 | 1661 | 1731 |
| 49 | 1801 | 1871 | 1941 | 2010 | 2080 | 2150 | 2220 | 2290 | 2360 | 2430 |
| 3.50 | 12. 2500 | 2570 | 2640 | 2710 | 2780 | 2850 | 2920 | 2990 | 3061 | 3131 |
| N. | N² 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

P. P.

| | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.0 | 6.1 | 6.2 | 6.3 | 6.4 | 6.5 | 6.6 | 6.7 | 6.8 | 6.9 | 7.0 | 7.1 |
| 2 | 12.0 | 12.2 | 12.4 | 12.6 | 12.8 | 13.0 | 13.2 | 13.4 | 13.6 | 13.8 | 14.0 | 14.2 |
| 3 | 18.0 | 18.3 | 18.6 | 18.9 | 19.2 | 19.5 | 19.8 | 20.1 | 20.4 | 20.7 | 21.0 | 21.3 |
| 4 | 24.0 | 24.4 | 24.8 | 25.2 | 25.6 | 26.0 | 26.4 | 26.8 | 27.2 | 27.6 | 28.0 | 28.4 |
| 5 | 30.0 | 30.5 | 31.0 | 31.5 | 32.0 | 32.5 | 33.0 | 33.5 | 34.0 | 34.5 | 35.0 | 35.5 |
| 6 | 36.0 | 36.6 | 37.2 | 37.8 | 38.4 | 39.0 | 39.6 | 40.2 | 40.8 | 41.4 | 42.0 | 42.6 |
| 7 | 42.0 | 42.7 | 43.4 | 44.1 | 44.8 | 45.5 | 46.2 | 46.9 | 47.6 | 48.3 | 49.0 | 49.7 |
| 8 | 48.0 | 48.8 | 49.6 | 50.4 | 51.2 | 52.0 | 52.8 | 53.6 | 54.4 | 55.2 | 56.0 | 56.8 |
| 9 | 54.0 | 54.9 | 55.8 | 56.7 | 57.6 | 58.5 | 59.4 | 60.3 | 61.2 | 62.1 | 63.0 | 63.9 |

P. P.

# Anhang.

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# TAFELN

ZUR

## BESTIMMUNG DER ZEIT

NACH

## SONNEN-HÖHEN.

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Tafeln zur Berechnung der Höhen nach Barometer-Messungen.

Tafeln für Zeit- und Festrechnung.

Constanten. Verwandlungs-Logarithmen.

# Tafeln zur Bestimmung der Zeit nach Sonnenhöhen.

| Jahr. | k. | Jahr. | k. | Orte. | l. | φ. |
|---|---|---|---|---|---|---|
| | | | | | | ° |
| 1872 s | + 0.758 | 1922 | — 0.353 | Amsterdam. | + 0.024 | + 52.375 |
| 1873 | + 0.516 | 1923 | — 0.596 | Berlin. | 0.000 | + 52.505 |
| 1874 | + 0.274 | 1924 s | + 0.162 | Bordeaux. | + 0.039 | + 44.839 |
| 1875 | + 0.031 | 1925 | — 0.080 | Braunschweig. | + 0.008 | + 52.270 |
| 1876 s | + 0.789 | 1926 | — 0.322 | Bremen. | + 0.013 | + 53.080 |
| 1877 | + 0.547 | 1927 | — 0.565 | Breslau. | — 0.010 | + 51.116 |
| 1878 | + 0.305 | 1928 s | + 0.193 | Cassel. | + 0.011 | + 51.319 |
| 1879 | + 0.062 | 1929 | — 0.049 | Cöln. | + 0.018 | + 50.941 |
| 1880 s | + 0.820 | 1930 | — 0.291 | Copenhagen. | + 0.003 | + 55.681 |
| 1881 | + 0.578 | 1931 | — 0.534 | Danzig. | — 0.014 | + 54.355 |
| 1882 | + 0.336 | 1932 s | + 0.225 | Darmstadt. | + 0.014 | + 49.873 |
| 1883 | + 0.093 | 1933 | — 0.017 | Dresden. | — 0.001 | + 51.056 |
| 1884 s | + 0.851 | 1934 | — 0.259 | Düsseldorf. | + 0.019 | + 51.228 |
| 1885 | + 0.609 | 1935 | — 0.502 | Dorpat. | — 0.037 | + 58.380 |
| 1886 | + 0.367 | 1936 s | + 0.256 | Edinburg. | + 0.046 | + 55.957 |
| 1887 | + 0.124 | 1937 | + 0.014 | Frankfurt a/M. | + 0.013 | + 50.112 |
| 1888 s | + 0.882 | 1938 | — 0.228 | Hamburg. | + 0.010 | + 53.549 |
| 1889 | + 0.640 | 1939 | — 0.471 | Hannover. | + 0.010 | + 52.374 |
| 1890 | + 0.398 | 1940 s | + 0.287 | Königsberg. | — 0.019 | + 54.714 |
| 1891 | + 0.155 | 1941 | + 0.045 | Leipzig. | + 0.003 | + 51.339 |
| 1892 s | + 0.913 | 1942 | — 0.197 | Liegnitz. | — 0.007 | + 51.214 |
| 1893 | + 0.671 | 1943 | — 0.440 | London. | + 0.038 | + 51.514 |
| 1894 | + 0.429 | 1944 s | + 0.318 | Lübeck. | + 0.008 | + 53.868 |
| 1895 | + 0.186 | 1945 | + 0.076 | Luxemburg. | + 0.020 | + 49.627 |
| 1896 s | + 0.945 | 1946 | — 0.166 | Lyon. | + 0.024 | + 45.762 |
| 1897 | + 0.703 | 1947 | — 0.409 | Magdeburg. | + 0.005 | + 52.135 |
| 1898 | + 0.461 | 1948 s | + 0.349 | Mainz. | + 0.014 | + 49.996 |
| 1899 | + 0.218 | 1949 | + 0.107 | Marseille. | + 0.023 | + 43.297 |
| 1900 | — 0.024 | 1950 | — 0.135 | Metz. | + 0.020 | + 49.121 |
| 1901 | — 0.266 | 1951 | — 0.378 | Minden. | + 0.013 | + 52.296 |
| 1902 | — 0.508 | 1952 s | + 0.380 | Moskau. | — 0.067 | + 55.756 |
| 1903 | — 0.751 | 1953 | + 0.138 | München. | + 0.005 | + 48.139 |
| 1904 s | + 0.007 | 1954 | — 0.104 | Neapel. | — 0.002 | + 40.834 |
| 1905 | — 0.235 | 1955 | — 0.347 | Nürnberg. | + 0.007 | + 49.458 |
| 1906 | — 0.477 | 1956 s | + 0.411 | Paris. | + 0.031 | + 48.846 |
| 1907 | — 0.720 | 1957 | + 0.169 | Pest. | — 0.015 | + 47.500 |
| 1908 s | + 0.038 | 1958 | — 0.073 | Petersburg. | — 0.047 | + 59.942 |
| 1909 | — 0.204 | 1959 | — 0.316 | Potsdam. | + 0.001 | + 52.412 |
| 1910 | — 0.446 | 1960 s | + 0.442 | Prag. | — 0.003 | + 50.090 |
| 1911 | — 0.689 | 1961 | + 0.200 | Regensburg. | + 0.004 | + 49.017 |
| 1912 s | + 0.069 | 1962 | — 0.042 | Riga. | — 0.029 | + 56.950 |
| 1913 | — 0.173 | 1963 | — 0.285 | Rom. | + 0.003 | + 41.902 |
| 1914 | — 0.415 | 1964 s | + 0.474 | Schleswig. | + 0.011 | + 54.519 |
| 1915 | — 0.658 | 1965 | + 0.232 | Schwerin. | + 0.006 | + 53.700 |
| 1916 s | + 0.100 | 1966 | — 0.010 | Stettin. | — 0.003 | + 53.419 |
| 1917 | — 0.142 | 1967 | — 0.253 | Stockholm. | — 0.013 | + 59.343 |
| 1918 | — 0.384 | 1968 s | + 0.505 | Strasburg. | + 0.016 | + 48.582 |
| 1919 | — 0.627 | 1969 | + 0.263 | Stuttgart. | + 0.012 | + 48.777 |
| 1920 s | + 0.131 | 1970 | + 0.021 | Triest. | — 0.001 | + 45.643 |
| 1921 | — 0.111 | 1971 | — 0.222 | Warschau. | — 0.021 | + 52.218 |
| 1922 | — 0.353 | 1972 s | + 0.536 | Wien. | — 0.008 | + 48.210 |

## Tafeln zur Bestimmung der Zeit nach Sonnenhöhen.

| Datum. Schaltjahr. | Datum. Gemeinjahr. | Januar. Declination der Sonne. | Diff. | Januar. Zeitgleichung. | Diff. | Februar. Declination der Sonne. | Diff. | Februar. Zeitgleichung. | Diff. |
|---|---|---|---|---|---|---|---|---|---|
| | | ° | | m. s. | s. | ° | | m. s. | s. |
| 1 | 0 | — 23.105 | 078 | + 3 44 | 28 | — 17.430 | 281 | + 13 41 | 8 |
| 2 | 1 | — 23.027 | 085 | + 4 12 | 28 | — 17.149 | 287 | + 13 49 | 8 |
| 3 | 2 | — 22.942 | 093 | + 4 40 | 27 | — 16.862 | 291 | + 13 57 | 7 |
| 4 | 3 | — 22.849 | 100 | + 5 7 | 27 | — 16.571 | 296 | + 14 4 | 6 |
| 5 | 4 | — 22.749 | 108 | + 5 34 | 26 | — 16.275 | 301 | + 14 10 | 5 |
| 6 | 5 | — 22.641 | 116 | + 6 0 | 26 | — 15.974 | 305 | + 14 15 | 4 |
| 7 | 6 | — 22.525 | 123 | + 6 26 | 26 | — 15.669 | 310 | + 14 19 | 3 |
| 8 | 7 | — 22.402 | 130 | + 6 52 | 25 | — 15.359 | 314 | + 14 22 | 3 |
| 9 | 8 | — 22.272 | 138 | + 7 17 | 25 | — 15.045 | 318 | + 14 25 | 2 |
| 10 | 9 | — 22.134 | 144 | + 7 42 | 24 | — 14.727 | 322 | + 14 27 | 1 |
| 11 | 10 | — 21.990 | 152 | + 8 6 | 23 | — 14.405 | 326 | + 14 28 | 0 |
| 12 | 11 | — 21.838 | 159 | + 8 29 | 23 | — 14.079 | 330 | + 14 28 | 0 |
| 13 | 12 | — 21.679 | 166 | + 8 52 | 22 | — 13.749 | 335 | + 14 28 | 1 |
| 14 | 13 | — 21.513 | 173 | + 9 14 | 22 | — 13.414 | 337 | + 14 27 | 2 |
| 15 | 14 | — 21.340 | 179 | + 9 36 | 21 | — 13.077 | 341 | + 14 25 | 3 |
| 16 | 15 | — 21.161 | 187 | + 9 57 | 20 | — 12.736 | 345 | + 14 22 | 3 |
| 17 | 16 | — 20.974 | 193 | + 10 17 | 19 | — 12.391 | 348 | + 14 19 | 4 |
| 18 | 17 | — 20.781 | 200 | + 10 36 | 19 | — 12.043 | 351 | + 14 15 | 4 |
| 19 | 18 | — 20.581 | 206 | + 10 55 | 18 | — 11.692 | 355 | + 14 11 | 6 |
| 20 | 19 | — 20.375 | 213 | + 11 13 | 18 | — 11.337 | 357 | + 14 5 | 6 |
| 21 | 20 | — 20.162 | 219 | + 11 31 | 17 | — 10.980 | 360 | + 13 59 | 7 |
| 22 | 21 | — 19.943 | 226 | + 11 48 | 16 | — 10.620 | 363 | + 13 52 | 7 |
| 23 | 22 | — 19.717 | 231 | + 12 4 | 15 | — 10.257 | 365 | + 13 45 | 8 |
| 24 | 23 | — 19.486 | 237 | + 12 19 | 14 | — 9.892 | 368 | + 13 37 | 9 |
| 25 | 24 | — 19.249 | 243 | + 12 33 | 13 | — 9.524 | 370 | + 13 28 | 9 |
| 26 | 25 | — 19.006 | 249 | + 12 46 | 13 | — 9.154 | 373 | + 13 19 | 10 |
| 27 | 26 | — 18.757 | 254 | + 12 59 | 12 | — 8.781 | 374 | + 13 9 | 10 |
| 28 | 27 | — 18.503 | 260 | + 13 11 | 11 | — 8.407 | 377 | + 12 59 | 11 |
| 29 | 28 | — 18.243 | 266 | + 13 22 | 10 | — 8.030 | 379 | + 12 48 | 12 |
| 30 | 29 | — 17.977 | 271 | + 13 32 | 9 | — 7.651 | | + 12 36 | |
| 31 | 30 | — 17.706 | 276 | + 13 41 | 8 | | | | |
| 32 | 31 | — 17.430 | | + 13 49 | | | | | |

# Tafeln zur Bestimmung der Zeit nach Sonnenhöhen.

| Datum. | Maerz. Declination der Sonne. | Diff. | Zeitgleichung. | Diff. | April. Declination der Sonne. | Diff. | Zeitgleichung. | Diff. |
|---|---|---|---|---|---|---|---|---|
| | ° | | m. s. | s. | ° | | m. s. | s. |
| 1 | — 7.651 | 380 | + 12 36 | 12 | + 4.467 | 385 | + 4 1 | 18 |
| 2 | — 7.271 | 382 | + 12 24 | 13 | + 4.852 | 384 | + 3 43 | 18 |
| 3 | — 6.889 | 384 | + 12 11 | 13 | + 5.236 | 382 | + 3 25 | 18 |
| 4 | — 6.505 | 385 | + 11 58 | 13 | + 5.618 | 381 | + 3 7 | 18 |
| 5 | — 6.120 | 386 | + 11 45 | 14 | + 5.999 | 378 | + 2 49 | 18 |
| 6 | — 5.734 | 388 | + 11 31 | 14 | + 6.377 | 377 | + 2 31 | 17 |
| 7 | — 5.346 | 389 | + 11 17 | 15 | + 6.754 | 375 | + 2 14 | 17 |
| 8 | — 4.957 | 390 | + 11 2 | 15 | + 7.129 | 373 | + 1 57 | 17 |
| 9 | — 4.567 | 391 | + 10 47 | 16 | + 7.502 | 371 | + 1 40 | 17 |
| 10 | — 4.176 | 392 | + 10 31 | 16 | + 7.873 | 369 | + 1 23 | 16 |
| 11 | — 3.784 | 393 | + 10 15 | 16 | + 8.242 | 366 | + 1 7 | 16 |
| 12 | — 3.391 | 393 | + 9 59 | 16 | + 8.608 | 364 | + 0 51 | 16 |
| 13 | — 2.998 | 394 | + 9 43 | 17 | + 8.972 | 362 | + 0 35 | 16 |
| 14 | — 2.604 | 394 | + 9 26 | 17 | + 9.334 | 359 | + 0 19 | 15 |
| 15 | — 2.210 | 395 | + 9 9 | 17 | + 9.693 | 357 | + 0 4 | 15 |
| 16 | — 1.815 | 395 | + 8 52 | 17 | + 10.050 | 354 | — 0 11 | 14 |
| 17 | — 1.420 | 395 | + 8 35 | 18 | + 10.404 | 351 | — 0 25 | 14 |
| 18 | — 1.025 | 395 | + 8 17 | 18 | + 10.755 | 348 | — 0 39 | 13 |
| 19 | — 0.630 | 395 | + 7 59 | 18 | + 11.103 | 345 | — 0 52 | 13 |
| 20 | — 0.235 | 396 | + 7 41 | 18 | + 11.448 | 342 | — 1 5 | 13 |
| 21 | + 0.161 | 395 | + 7 23 | 18 | + 11.790 | 339 | — 1 18 | 12 |
| 22 | + 0.556 | 394 | + 7 5 | 18 | + 12.129 | 335 | — 1 30 | 12 |
| 23 | + 0.950 | 394 | + 6 47 | 19 | + 12.464 | 332 | — 1 42 | 11 |
| 24 | + 1.344 | 393 | + 6 28 | 18 | + 12.796 | 328 | — 1 53 | 11 |
| 25 | + 1.737 | 393 | + 6 10 | 18 | + 13.124 | 325 | — 2 4 | 11 |
| 26 | + 2.130 | 392 | + 5 52 | 18 | + 13.449 | 321 | — 2 15 | 10 |
| 27 | + 2.522 | 391 | + 5 34 | 19 | + 13.770 | 317 | — 2 25 | 9 |
| 28 | + 2.913 | 390 | + 5 15 | 18 | + 14.087 | 313 | — 2 34 | 9 |
| 29 | + 3.303 | 389 | + 4 57 | 19 | + 14.400 | 309 | — 2 43 | 9 |
| 30 | + 3.692 | 388 | + 4 38 | 19 | + 14.709 | 306 | — 2 52 | 8 |
| 31 | + 4.080 | 387 | + 4 19 | 18 | + 15.015 | | — 3 0 | |
| 32 | + 4.467 | | + 4 1 | | | | | |

# Tafeln zur Bestimmung der Zeit nach Sonnenhöhen.

| Datum. | Mai. Declination der Sonne. | Diff. | Zeitgleichung. | Diff. | Juni. Declination der Sonne. | Diff. | Zeitgleichung. | Diff. |
|---|---|---|---|---|---|---|---|---|
| | ° | | m. s. | s. | ° | | m. s. | s. |
| 1 | + 15.015 | 301 | — 3 0 | 7 | + 22.033 | 134 | — 2 32 | 9 |
| 2 | + 15.316 | 297 | — 3 7 | 7 | + 22.167 | 128 | — 2 23 | 9 |
| 3 | + 15.613 | 293 | — 3 14 | 7 | + 22.295 | 121 | — 2 14 | 10 |
| 4 | + 15.906 | 288 | — 3 21 | 6 | + 22.416 | 115 | — 2 4 | 10 |
| 5 | + 16.194 | 284 | — 3 27 | 5 | + 22.531 | 108 | — 1 54 | 10 |
| 6 | + 16.478 | 279 | — 3 32 | 5 | + 22.639 | 102 | — 1 44 | 11 |
| 7 | + 16.757 | 275 | — 3 37 | 4 | + 22.741 | 095 | — 1 33 | 11 |
| 8 | + 17.032 | 270 | — 3 41 | 4 | + 22.836 | 088 | — 1 22 | 11 |
| 9 | + 17.302 | 265 | — 3 45 | 3 | + 22.924 | 082 | — 1 11 | 12 |
| 10 | + 17.567 | 260 | — 3 48 | 2 | + 23.006 | 075 | — 0 59 | 12 |
| 11 | + 17.827 | 255 | — 3 50 | 2 | + 23.081 | 068 | — 0 47 | 12 |
| 12 | + 18.082 | 251 | — 3 52 | 1 | + 23.149 | 061 | — 0 35 | 12 |
| 13 | + 18.333 | 245 | — 3 53 | 0 | + 23.210 | 055 | — 0 23 | 13 |
| 14 | + 18.578 | 240 | — 3 53 | 0 | + 23.265 | 048 | — 0 10 | 12 |
| 15 | + 18.818 | 235 | — 3 53 | 0 | + 23.313 | 041 | + 0 2 | 13 |
| 16 | + 19.053 | 230 | — 3 53 | 1 | + 23.354 | 034 | + 0 15 | 13 |
| 17 | + 19.283 | 224 | — 3 52 | 2 | + 23.388 | 027 | + 0 28 | 13 |
| 18 | + 19.507 | 219 | — 3 50 | 2 | + 23.415 | 020 | + 0 41 | 14 |
| 19 | + 19.726 | 213 | — 3 48 | 3 | + 23.435 | 014 | + 0 55 | 13 |
| 20 | + 19.939 | 207 | — 3 45 | 3 | + 23.449 | 006 | + 1 8 | 13 |
| 21 | + 20.146 | 201 | — 3 42 | 4 | + 23.455 | 000 | + 1 21 | 13 |
| 22 | + 20.347 | 196 | — 3 38 | 4 | + 23.455 | 008 | + 1 34 | 13 |
| 23 | + 20.543 | 190 | — 3 34 | 5 | + 23.447 | 014 | + 1 47 | 13 |
| 24 | + 20.733 | 184 | — 3 29 | 6 | + 23.433 | 021 | + 2 0 | 13 |
| 25 | + 20.917 | 178 | — 3 23 | 6 | + 23.412 | 028 | + 2 13 | 12 |
| 26 | + 21.095 | 172 | — 3 17 | 7 | + 23.384 | 035 | + 2 25 | 13 |
| 27 | + 21.267 | 166 | — 3 10 | 6 | + 23.349 | 041 | + 2 38 | 12 |
| 28 | + 21.433 | 159 | — 3 4 | 7 | + 23.308 | 049 | + 2 50 | 12 |
| 29 | + 21.592 | 153 | — 2 57 | 8 | + 23.259 | 055 | + 3 2 | 12 |
| 30 | + 21.745 | 147 | — 2 49 | 8 | + 23.204 | 062 | + 3 14 | 12 |
| 31 | + 21.892 | 141 | — 2 41 | 9 | + 23.142 | | + 3 26 | |
| 32 | + 22.033 | | — 2 32 | | | | | |

## Tafeln zur Bestimmung der Zeit nach Sonnenhöhen.

| Datum. | Juli. Declination der Sonne. | Diff. | Zeitgleichung. | Diff. | August. Declination der Sonne. | Diff. | Zeitgleichung. | Diff. |
|---|---|---|---|---|---|---|---|---|
| | ° | | m. s. | s. | ° | | m. s. | s. |
| 1 | + 23.142 | 069 | + 3 26 | 12 | + 18.097 | 253 | + 6 5 | 4 |
| 2 | + 23.073 | 075 | + 3 38 | 11 | + 17.844 | 258 | + 6 1 | 4 |
| 3 | + 22.998 | 082 | + 3 49 | 11 | + 17.586 | 263 | + 5 57 | 5 |
| 4 | + 22.916 | 089 | + 4 0 | 11 | + 17.323 | 267 | + 5 52 | 6 |
| 5 | + 22.827 | 095 | + 4 11 | 10 | + 17.056 | 272 | + 5 46 | 6 |
| 6 | + 22.732 | 102 | + 4 21 | 10 | + 16.784 | 276 | + 5 40 | 6 |
| 7 | + 22.630 | 108 | + 4 31 | 9 | + 16.508 | 281 | + 5 34 | 7 |
| 8 | + 22.522 | 115 | + 4 40 | 9 | + 16.227 | 285 | + 5 27 | 8 |
| 9 | + 22.407 | 122 | + 4 49 | 9 | + 15.942 | 290 | + 5 19 | 8 |
| 10 | + 22.285 | 128 | + 4 58 | 9 | + 15.652 | 294 | + 5 11 | 9 |
| 11 | + 22.157 | 134 | + 5 7 | 8 | + 15.358 | 298 | + 5 2 | 10 |
| 12 | + 22.023 | 141 | + 5 15 | 7 | + 15.060 | 302 | + 4 52 | 10 |
| 13 | + 21.882 | 147 | + 5 22 | 7 | + 14.758 | 305 | + 4 42 | 10 |
| 14 | + 21.735 | 153 | + 5 29 | 7 | + 14.453 | 310 | + 4 32 | 11 |
| 15 | + 21.582 | 159 | + 5 36 | 6 | + 14.143 | 314 | + 4 21 | 12 |
| 16 | + 21.423 | 165 | + 5 42 | 6 | + 13.829 | 317 | + 4 9 | 12 |
| 17 | + 21.258 | 171 | + 5 48 | 5 | + 13.512 | 321 | + 3 57 | 13 |
| 18 | + 21.087 | 177 | + 5 53 | 5 | + 13.191 | 324 | + 3 44 | 13 |
| 19 | + 20.910 | 183 | + 5 58 | 4 | + 12.867 | 328 | + 3 31 | 14 |
| 20 | + 20.727 | 189 | + 6 2 | 4 | + 12.539 | 331 | + 3 17 | 14 |
| 21 | + 20.538 | 195 | + 6 6 | 3 | + 12.208 | 335 | + 3 3 | 15 |
| 22 | + 20.343 | 200 | + 6 9 | 2 | + 11.873 | 337 | + 2 48 | 15 |
| 23 | + 20.143 | 206 | + 6 11 | 2 | + 11.536 | 340 | + 2 33 | 15 |
| 24 | + 19.937 | 211 | + 6 13 | 1 | + 11.196 | 343 | + 2 18 | 16 |
| 25 | + 19.726 | 217 | + 6 14 | 1 | + 10.853 | 346 | + 2 2 | 17 |
| 26 | + 19.509 | 222 | + 6 15 | 0 | + 10.507 | 349 | + 1 45 | 17 |
| 27 | + 19.287 | 228 | + 6 15 | 1 | + 10.158 | 352 | + 1 28 | 17 |
| 28 | + 19.059 | 233 | + 6 14 | 1 | + 9.806 | 354 | + 1 11 | 18 |
| 29 | + 18.826 | 238 | + 6 13 | 2 | + 9.452 | 356 | + 0 53 | 18 |
| 30 | + 18.588 | 243 | + 6 11 | 3 | + 9.096 | 359 | + 0 35 | 18 |
| 31 | + 18.345 | 248 | + 6 8 | 3 | + 8.737 | 361 | + 0 17 | 18 |
| 32 | + 18.097 | | + 6 5 | | + 8.376 | | — 0 1 | |

## Tafeln zur Bestimmung der Zeit nach Sonnenhöhen.

| | September. | | | | October. | | | |
|---|---|---|---|---|---|---|---|---|
| Datum. | Declination der Sonne. | Diff. | Zeitgleichung. | Diff. | Declination der Sonne. | Diff. | Zeitgleichung. | Diff. |
| | ° | | m. s. | s. | ° | | m. s. | s. |
| 1 | + 8.376 | 364 | — 0 1 | 19 | — 3.105 | 388 | — 10 15 | 19 |
| 2 | + 8.012 | 366 | — 0 20 | 19 | — 3.493 | 388 | — 10 34 | 19 |
| 3 | + 7.646 | 368 | — 0 39 | 20 | — 3.881 | 387 | — 10 53 | 18 |
| 4 | + 7.278 | 370 | — 0 59 | 20 | — 4.268 | 386 | — 11 11 | 18 |
| 5 | + 6.908 | 372 | — 1 19 | 20 | — 4.654 | 385 | — 11 29 | 18 |
| 6 | + 6.536 | 374 | — 1 39 | 20 | — 5.039 | 384 | — 11 47 | 17 |
| 7 | + 6.162 | 375 | — 1 59 | 20 | — 5.423 | 383 | — 12 4 | 17 |
| 8 | + 5.787 | 377 | — 2 19 | 20 | — 5.806 | 382 | — 12 21 | 16 |
| 9 | + 5.410 | 378 | — 2 39 | 21 | — 6.188 | 380 | — 12 37 | 16 |
| 10 | + 5.032 | 380 | — 3 0 | 20 | — 6.568 | 379 | — 12 53 | 16 |
| 11 | + 4.652 | 381 | — 3 20 | 21 | — 6.947 | 378 | — 13 9 | 15 |
| 12 | + 4.271 | 383 | — 3 41 | 21 | — 7.325 | 376 | — 13 24 | 14 |
| 13 | + 3.888 | 384 | — 4 2 | 21 | — 7.701 | 374 | — 13 38 | 14 |
| 14 | + 3.504 | 385 | — 4 23 | 21 | — 8.075 | 372 | — 13 52 | 14 |
| 15 | + 3.119 | 386 | — 4 44 | 21 | — 8.447 | 371 | — 14 6 | 13 |
| 16 | + 2.733 | 387 | — 5 5 | 21 | — 8.818 | 368 | — 14 19 | 12 |
| 17 | + 2.346 | 387 | — 5 26 | 22 | — 9.186 | 366 | — 14 31 | 12 |
| 18 | + 1.959 | 388 | — 5 48 | 21 | — 9.552 | 364 | — 14 43 | 11 |
| 19 | + 1.571 | 389 | — 6 9 | 21 | — 9.916 | 361 | — 14 54 | 10 |
| 20 | + 1.182 | 389 | — 6 30 | 21 | — 10.277 | 359 | — 15 4 | 10 |
| 21 | + 0.793 | 390 | — 6 51 | 21 | — 10.636 | 356 | — 15 14 | 9 |
| 22 | + 0.403 | 390 | — 7 12 | 21 | — 10.992 | 353 | — 15 23 | 9 |
| 23 | + 0.013 | 390 | — 7 33 | 21 | — 11.345 | 350 | — 15 32 | 8 |
| 24 | — 0.377 | 390 | — 7 54 | 21 | — 11.695 | 347 | — 15 40 | 7 |
| 25 | — 0.767 | 390 | — 8 15 | 20 | — 12.042 | 344 | — 15 47 | 7 |
| 26 | — 1.157 | 390 | — 8 35 | 20 | — 12.386 | 341 | — 15 54 | 6 |
| 27 | — 1.547 | 390 | — 8 55 | 20 | — 12.727 | 338 | — 16 0 | 5 |
| 28 | — 1.937 | 390 | — 9 15 | 20 | — 13.065 | 334 | — 16 5 | 4 |
| 29 | — 2.327 | 389 | — 9 35 | 20 | — 13.399 | 331 | — 16 9 | 4 |
| 30 | — 2.716 | 389 | — 9 55 | 20 | — 13.730 | 327 | — 16 13 | 3 |
| 31 | — 3.105 | | — 10 15 | | — 14.057 | 324 | — 16 16 | 2 |
| 32 | | | | | — 14.381 | | — 16 18 | |

# Tafeln zur Bestimmung der Zeit nach Sonnenhöhen.

| Datum. | November. Declination der Sonne. | Diff. | Zeitgleichung. | Diff. | December. Declination der Sonne. | Diff. | Zeitgleichung. | Diff. |
|---|---|---|---|---|---|---|---|---|
| | ° | | m. s. | s. | ° | | m. s. | s. |
| 1 | — 14.381 | 319 | — 16 18 | 1 | — 21.793 | 153 | — 10 53 | 23 |
| 2 | — 14.700 | 316 | — 16 19 | 1 | — 21.946 | 146 | — 10 30 | 23 |
| 3 | — 15.016 | 312 | — 16 20 | 1 | — 22.092 | 139 | — 10 7 | 24 |
| 4 | — 15.328 | 307 | — 16 19 | 1 | — 22.231 | 132 | — 9 43 | 24 |
| 5 | — 15.635 | 303 | — 16 18 | 2 | — 22.363 | 125 | — 9 19 | 25 |
| 6 | — 15.938 | 299 | — 16 16 | 3 | — 22.488 | 118 | — 8 54 | 26 |
| 7 | — 16.237 | 294 | — 16 13 | 4 | — 22.606 | 110 | — 8 28 | 26 |
| 8 | — 16.531 | 289 | — 16 9 | 5 | — 22.716 | 102 | — 8 2 | 27 |
| 9 | — 16.820 | 285 | — 16 4 | 6 | — 22.818 | 095 | — 7 35 | 27 |
| 10 | — 17.105 | 280 | — 15 58 | 6 | — 22.913 | 088 | — 7 8 | 28 |
| 11 | — 17.385 | 275 | — 15 52 | 7 | — 23.001 | 080 | — 6 40 | 28 |
| 12 | — 17.660 | 270 | — 15 45 | 8 | — 23.081 | 073 | — 6 12 | 28 |
| 13 | — 17.930 | 265 | — 15 37 | 9 | — 23.154 | 065 | — 5 44 | 29 |
| 14 | — 18.195 | 259 | — 15 28 | 10 | — 23.219 | 057 | — 5 15 | 29 |
| 15 | — 18.454 | 254 | — 15 18 | 11 | — 23.276 | 049 | — 4 46 | 29 |
| 16 | — 18.708 | 248 | — 15 7 | 11 | — 23.325 | 042 | — 4 17 | 30 |
| 17 | — 18.956 | 243 | — 14 56 | 12 | — 23.367 | 033 | — 3 47 | 29 |
| 18 | — 19.199 | 237 | — 14 44 | 13 | — 23.400 | 026 | — 3 18 | 30 |
| 19 | — 19.436 | 231 | — 14 31 | 14 | — 23.426 | 018 | — 2 48 | 29 |
| 20 | — 19.667 | 225 | — 14 17 | 15 | — 23.444 | 010 | — 2 19 | 30 |
| 21 | — 19.892 | 219 | — 14 2 | 16 | — 23.454 | 002 | — 1 49 | 30 |
| 22 | — 20.111 | 213 | — 13 46 | 16 | — 23.456 | 006 | — 1 19 | 30 |
| 23 | — 20.324 | 206 | — 13 30 | 17 | — 23.450 | 014 | — 0 49 | 30 |
| 24 | — 20.530 | 200 | — 13 13 | 18 | — 23.436 | 021 | — 0 19 | 30 |
| 25 | — 20.730 | 194 | — 12 55 | 19 | — 23.415 | 029 | + 0 11 | 30 |
| 26 | — 20.924 | 187 | — 12 36 | 19 | — 23.386 | 037 | + 0 41 | 29 |
| 27 | — 21.111 | 181 | — 12 17 | 20 | — 23.349 | 045 | + 1 10 | 30 |
| 28 | — 21.292 | 174 | — 11 57 | 20 | — 23.304 | 053 | + 1 40 | 29 |
| 29 | — 21.466 | 167 | — 11 37 | 22 | — 23.251 | 060 | + 2 9 | 30 |
| 30 | — 21.633 | 160 | — 11 15 | 22 | — 23.191 | 068 | + 2 39 | 29 |
| 31 | — 21.793 | | — 10 53 | | — 23.123 | 077 | + 3 8 | 28 |
| 32 | | | | | — 23.046 | | + 3 36 | |

## Tafel der Refraction und Parallaxe.

| Scheinbare Höhe. | Mittlere Refraction. | Scheinbare Höhe. | Mittlere Refraction. | Scheinbare Höhe. | Mittlere Refraction. |
|---|---|---|---|---|---|
| ° | ° | ° | ° | ° | ° |
| 5.0 | 0.163 | 10.0 | 0.088 | 15 | 0.059 |
| 5.1 | 0.160 | 10.1 | 0.087 | 16 | 0.055 |
| 5.2 | 0.158 | 10.2 | 0.086 | 17 | 0.052 |
| 5.3 | 0.155 | 10.3 | 0.085 | 18 | 0.049 |
| 5.4 | 0.153 | 10.4 | 0.085 | 19 | 0.046 |
| 5.5 | 0.151 | 10.5 | 0.084 | 20 | 0.044 |
| 5.6 | 0.148 | 10.6 | 0.083 | 21 | 0.041 |
| 5.7 | 0.146 | 10.7 | 0.082 | 22 | 0.039 |
| 5.8 | 0.144 | 10.8 | 0.082 | 23 | 0.038 |
| 5.9 | 0.142 | 10.9 | 0.081 | 24 | 0.036 |
| 6.0 | 0.140 | 11.0 | 0.080 | 25 | 0.034 |
| 6.1 | 0.138 | 11.1 | 0.080 | 26 | 0.033 |
| 6.2 | 0.136 | 11.2 | 0.079 | 27 | 0.031 |
| 6.3 | 0.134 | 11.3 | 0.078 | 28 | 0.030 |
| 6.4 | 0.132 | 11.4 | 0.077 | 29 | 0.029 |
| 6.5 | 0.131 | 11.5 | 0.077 | 30 | 0.028 |
| 6.6 | 0.129 | 11.6 | 0.076 | 31 | 0.027 |
| 6.7 | 0.127 | 11.7 | 0.075 | 32 | 0.026 |
| 6.8 | 0.125 | 11.8 | 0.075 | 33 | 0.025 |
| 6.9 | 0.124 | 11.9 | 0.074 | 34 | 0.024 |
| 7.0 | 0.122 | 12.0 | 0.074 | 35 | 0.023 |
| 7.1 | 0.121 | 12.1 | 0.073 | 36 | 0.022 |
| 7.2 | 0.119 | 12.2 | 0.072 | 37 | 0.021 |
| 7.3 | 0.118 | 12.3 | 0.072 | 38 | 0.021 |
| 7.4 | 0.116 | 12.4 | 0.071 | 39 | 0.020 |
| 7.5 | 0.115 | 12.5 | 0.071 | 40 | 0.019 |
| 7.6 | 0.113 | 12.6 | 0.070 | 41 | 0.018 |
| 7.7 | 0.112 | 12.7 | 0.070 | 42 | 0.018 |
| 7.8 | 0.111 | 12.8 | 0.069 | 43 | 0.017 |
| 7.9 | 0.109 | 12.9 | 0.069 | 44 | 0.017 |
| 8.0 | 0.108 | 13.0 | 0.068 | 45 | 0.016 |
| 8.1 | 0.107 | 13.1 | 0.068 | 46 | 0.015 |
| 8.2 | 0.106 | 13.2 | 0.067 | 47 | 0.015 |
| 8.3 | 0.104 | 13.3 | 0.067 | 48 | 0.014 |
| 8.4 | 0.103 | 13.4 | 0.066 | 49 | 0.014 |
| 8.5 | 0.102 | 13.5 | 0.066 | 50 | 0.013 |
| 8.6 | 0.101 | 13.6 | 0.065 | 51 | 0.013 |
| 8.7 | 0.100 | 13.7 | 0.065 | 52 | 0.012 |
| 8.8 | 0.099 | 13.8 | 0.064 | 53 | 0.012 |
| 8.9 | 0.098 | 13.9 | 0.064 | 54 | 0.011 |
| 9.0 | 0.097 | 14.0 | 0.063 | 55 | 0.011 |
| 9.1 | 0.096 | 14.1 | 0.063 | 56 | 0.011 |
| 9.2 | 0.095 | 14.2 | 0.062 | 57 | 0.010 |
| 9.3 | 0.094 | 14.3 | 0.062 | 58 | 0.010 |
| 9.4 | 0.093 | 14.4 | 0.061 | 59 | 0.010 |
| 9.5 | 0.092 | 14.5 | 0.061 | 60 | 0.009 |
| 9.6 | 0.091 | 14.6 | 0.061 | 70 | 0.006 |
| 9.7 | 0.091 | 14.7 | 0.060 | 80 | 0.003 |
| 9.8 | 0.090 | 14.8 | 0.060 | 90 | 0.000 |
| 9.9 | 0.089 | 14.9 | 0.059 | | |
| 10.0 | 0.088 | 15.0 | 0.059 | | |

| Grade Réaum. | Correction für 0.1° mittlere Refraction. |
|---|---|
| ° | ° |
| − 15 | + 0.011 |
| − 10 | + 0.009 |
| − 5 | + 0.006 |
| 0 | + 0.004 |
| + 5 | + 0.002 |
| + 10 | − 0.001 |
| + 15 | − 0.004 |
| + 20 | − 0.006 |
| + 25 | − 0.008 |

| Barometer in Pariser Zoll u. Linien. | | Correction für 0.1° mittlere Refraction. |
|---|---|---|
| ' | '' | ° |
| 26 | 0 | − 0.007 |
| | 3 | − 0.006 |
| | 6 | − 0.005 |
| | 9 | − 0.004 |
| 27 | 0 | − 0.003 |
| | 3 | − 0.002 |
| | 6 | − 0.001 |
| | 9 | 0.000 |
| 28 | 0 | + 0.001 |
| | 3 | + 0.002 |
| | 6 | + 0.003 |
| | 9 | + 0.004 |
| 29 | 0 | + 0.004 |

| Höhe. | Parallaxe der Sonne. |
|---|---|
| ° | ° |
| 0 | 0.002 |
| 10 | 0.002 |
| 20 | 0.002 |
| 30 | 0.002 |
| 40 | 0.002 |
| 50 | 0.002 |
| 60 | 0.001 |
| 70 | 0.001 |
| 80 | 0.000 |
| 90 | 0.000 |

| Datum. | | Halbmesser der Sonne. |
|---|---|---|
| Januar | 1 | 0.272 |
| | 11 | 0.272 |
| | 21 | 0.271 |
| | 31 | 0.271 |
| Februar | 10 | 0.271 |
| | 20 | 0.270 |
| März | 2 | 0.269 |
| | 12 | 0.269 |
| | 22 | 0.268 |
| April | 1 | 0.267 |
| | 11 | 0.266 |
| | 21 | 0.266 |
| Mai | 1 | 0.265 |
| | 11 | 0.264 |
| | 21 | 0.264 |
| | 31 | 0.263 |
| Juni | 10 | 0.263 |
| | 20 | 0.263 |
| | 30 | 0.263 |
| Juli | 10 | 0.263 |
| | 20 | 0.263 |
| | 30 | 0.263 |
| August | 9 | 0.264 |
| | 19 | 0.264 |
| | 29 | 0.265 |
| Septbr. | 8 | 0.265 |
| | 18 | 0.266 |
| | 28 | 0.267 |
| October | 8 | 0.267 |
| | 18 | 0.268 |
| | 28 | 0.269 |
| November | 7 | 0.270 |
| | 17 | 0.270 |
| | 27 | 0.271 |
| December | 7 | 0.271 |
| | 17 | 0.272 |
| | 27 | 0.272 |
| | 31 | 0.272 |

| Grade. | Stunden u. Minuten. | Decimalth. des Tages. | Grade. | Stunden u. Minuten. | Decimalth. des Tages. | Grade. | Stunden u. Minuten. | Decimalth. des Tages. |
|---|---|---|---|---|---|---|---|---|
| ° | h. m. | | ° | h. m. | | ° | h. m. | |
| 0 | 0 0 | 0.000 | 50 | 3 20 | 0.139 | 100 | 6 40 | 0.278 |
| 1 | 0 4 | 0.003 | 51 | 3 24 | 0.142 | 101 | 6 44 | 0.281 |
| 2 | 0 8 | 0.006 | 52 | 3 28 | 0.144 | 102 | 6 48 | 0.283 |
| 3 | 0 12 | 0.008 | 53 | 3 32 | 0.147 | 103 | 6 52 | 0.286 |
| 4 | 0 16 | 0.011 | 54 | 3 36 | 0.150 | 104 | 6 56 | 0.289 |
| 5 | 0 20 | 0.014 | 55 | 3 40 | 0.153 | 105 | 7 0 | 0.292 |
| 6 | 0 24 | 0.017 | 56 | 3 44 | 0.156 | 106 | 7 4 | 0.294 |
| 7 | 0 28 | 0.019 | 57 | 3 48 | 0.158 | 107 | 7 8 | 0.297 |
| 8 | 0 32 | 0.022 | 58 | 3 52 | 0.161 | 108 | 7 12 | 0.300 |
| 9 | 0 36 | 0.025 | 59 | 3 56 | 0.164 | 109 | 7 16 | 0.303 |
| 10 | 0 40 | 0.028 | 60 | 4 0 | 0.167 | 110 | 7 20 | 0.306 |
| 11 | 0 44 | 0.031 | 61 | 4 4 | 0.169 | 111 | 7 24 | 0.308 |
| 12 | 0 48 | 0.033 | 62 | 4 8 | 0.172 | 112 | 7 28 | 0.311 |
| 13 | 0 52 | 0.036 | 63 | 4 12 | 0.175 | 113 | 7 32 | 0.314 |
| 14 | 0 56 | 0.039 | 64 | 4 16 | 0.178 | 114 | 7 36 | 0.317 |
| 15 | 1 0 | 0.042 | 65 | 4 20 | 0.181 | 115 | 7 40 | 0.319 |
| 16 | 1 4 | 0.044 | 66 | 4 24 | 0.183 | 116 | 7 44 | 0.322 |
| 17 | 1 8 | 0.047 | 67 | 4 28 | 0.186 | 117 | 7 48 | 0.325 |
| 18 | 1 12 | 0.050 | 68 | 4 32 | 0.189 | 118 | 7 52 | 0.328 |
| 19 | 1 16 | 0.053 | 69 | 4 36 | 0.192 | 119 | 7 56 | 0.331 |
| 20 | 1 20 | 0.056 | 70 | 4 40 | 0.194 | 120 | 8 0 | 0.333 |
| 21 | 1 24 | 0.058 | 71 | 4 44 | 0.197 | 121 | 8 4 | 0.336 |
| 22 | 1 28 | 0.061 | 72 | 4 48 | 0.200 | 122 | 8 8 | 0.339 |
| 23 | 1 32 | 0.064 | 73 | 4 52 | 0.203 | 123 | 8 12 | 0.342 |
| 24 | 1 36 | 0.067 | 74 | 4 56 | 0.206 | 124 | 8 16 | 0.344 |
| 25 | 1 40 | 0.069 | 75 | 5 0 | 0.208 | 125 | 8 20 | 0.347 |
| 26 | 1 44 | 0.072 | 76 | 5 4 | 0.211 | 126 | 8 24 | 0.350 |
| 27 | 1 48 | 0.075 | 77 | 5 8 | 0.214 | 127 | 8 28 | 0.353 |
| 28 | 1 52 | 0.078 | 78 | 5 12 | 0.217 | 128 | 8 32 | 0.356 |
| 29 | 1 56 | 0.081 | 79 | 5 16 | 0.219 | 129 | 8 36 | 0.358 |
| 30 | 2 0 | 0.083 | 80 | 5 20 | 0.222 | 130 | 8 40 | 0.361 |
| 31 | 2 4 | 0.086 | 81 | 5 24 | 0.225 | 131 | 8 44 | 0.364 |
| 32 | 2 8 | 0.089 | 82 | 5 28 | 0.228 | 132 | 8 48 | 0.367 |
| 33 | 2 12 | 0.092 | 83 | 5 32 | 0.231 | 133 | 8 52 | 0.369 |
| 34 | 2 16 | 0.094 | 84 | 5 36 | 0.233 | 134 | 8 56 | 0.372 |
| 35 | 2 20 | 0.097 | 85 | 5 40 | 0.236 | 135 | 9 0 | 0.375 |
| 36 | 2 24 | 0.100 | 86 | 5 44 | 0.239 | 136 | 9 4 | 0.378 |
| 37 | 2 28 | 0.103 | 87 | 5 48 | 0.242 | 137 | 9 8 | 0.381 |
| 38 | 2 32 | 0.106 | 88 | 5 52 | 0.244 | 138 | 9 12 | 0.383 |
| 39 | 2 36 | 0.108 | 89 | 5 56 | 0.247 | 139 | 9 16 | 0.386 |
| 40 | 2 40 | 0.111 | 90 | 6 0 | 0.250 | 140 | 9 20 | 0.389 |
| 41 | 2 44 | 0.114 | 91 | 6 4 | 0.253 | 141 | 9 24 | 0.392 |
| 42 | 2 48 | 0.117 | 92 | 6 8 | 0.256 | 142 | 9 28 | 0.394 |
| 43 | 2 52 | 0.119 | 93 | 6 12 | 0.258 | 143 | 9 32 | 0.397 |
| 44 | 2 56 | 0.122 | 94 | 6 16 | 0.261 | 144 | 9 36 | 0.400 |
| 45 | 3 0 | 0.125 | 95 | 6 20 | 0.264 | 145 | 9 40 | 0.403 |
| 46 | 3 4 | 0.128 | 96 | 6 24 | 0.267 | 146 | 9 44 | 0.406 |
| 47 | 3 8 | 0.131 | 97 | 6 28 | 0.269 | 147 | 9 48 | 0.408 |
| 48 | 3 12 | 0.133 | 98 | 6 32 | 0.272 | 148 | 9 52 | 0.411 |
| 49 | 3 16 | 0.136 | 99 | 6 36 | 0.275 | 149 | 9 56 | 0.414 |
| 50 | 3 20 | 0.139 | 100 | 6 40 | 0.278 | 150 | 10 0 | 0.417 |

# Tafel zur Bestimmung der Zeit nach Sonnenhöhen für den Parallel von Berlin.

| Datum. Schaltjahr. | Datum. Gemeinjahr. | Januar. log. m. | diff. | Januar. log. n. | diff. | Februar. log. m. | diff. | Februar. log. n. | diff. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.25190 | 25 | 9.74514 | 164 | 0.23600 | 66 | 9.61195 | 751 |
| 2 | 1 | 0.25165 | 27 | 9.74350 | 179 | 0.23534 | 66 | 9.60444 | 777 |
| 3 | 2 | 0.25138 | 30 | 9.74171 | 197 | 0.23468 | 67 | 9.59667 | 802 |
| 4 | 3 | 0.25108 | 32 | 9.73974 | 212 | 0.23401 | 66 | 9.58865 | 826 |
| 5 | 4 | 0.25076 | 34 | 9.73762 | 230 | 0.23335 | 66 | 9.58039 | 854 |
| 6 | 5 | 0.25042 | 37 | 9.73532 | 248 | 0.23269 | 65 | 9.57185 | 882 |
| 7 | 6 | 0.25005 | 38 | 9.73284 | 263 | 0.23204 | 65 | 9.56303 | 912 |
| 8 | 7 | 0.24967 | 40 | 9.73021 | 280 | 0.23139 | 65 | 9.55391 | 941 |
| 9 | 8 | 0.24927 | 44 | 9.72741 | 299 | 0.23074 | 64 | 9.54450 | 971 |
| 10 | 9 | 0.24883 | 44 | 9.72442 | 315 | 0.23010 | 64 | 9.53479 | 1003 |
| 11 | 10 | 0.24839 | 46 | 9.72127 | 332 | 0.22946 | 63 | 9.52476 | 1037 |
| 12 | 11 | 0.24793 | 48 | 9.71795 | 350 | 0.22883 | 62 | 9.51439 | 1072 |
| 13 | 12 | 0.24745 | 50 | 9.71445 | 368 | 0.22821 | 61 | 9.50367 | 1111 |
| 14 | 13 | 0.24695 | 51 | 9.71077 | 386 | 0.22760 | 60 | 9.49256 | 1145 |
| 15 | 14 | 0.24644 | 53 | 9.70691 | 403 | 0.22700 | 59 | 9.48111 | 1187 |
| 16 | 15 | 0.24591 | 55 | 9.70288 | 421 | 0.22641 | 59 | 9.46924 | 1233 |
| 17 | 16 | 0.24536 | 56 | 9.69867 | 439 | 0.22582 | 57 | 9.45691 | 1276 |
| 18 | 17 | 0.24480 | 57 | 9.69428 | 459 | 0.22525 | 55 | 9.44415 | 1321 |
| 19 | 18 | 0.24423 | 58 | 9.68969 | 477 | 0.22470 | 55 | 9.43094 | 1376 |
| 20 | 19 | 0.24365 | 59 | 9.68492 | 496 | 0.22415 | 54 | 9.41718 | 1426 |
| 21 | 20 | 0.24306 | 61 | 9.67996 | 516 | 0.22361 | 52 | 9.40292 | 1483 |
| 22 | 21 | 0.24245 | 62 | 9.67480 | 536 | 0.22309 | 50 | 9.38809 | 1544 |
| 23 | 22 | 0.24183 | 62 | 9.66944 | 554 | 0.22259 | 49 | 9.37265 | 1606 |
| 24 | 23 | 0.24121 | 63 | 9.66390 | 574 | 0.22210 | 48 | 9.35659 | 1679 |
| 25 | 24 | 0.24058 | 64 | 9.65816 | 596 | 0.22162 | 47 | 9.33980 | 1752 |
| 26 | 25 | 0.23994 | 65 | 9.65220 | 616 | 0.22115 | 44 | 9.32228 | 1836 |
| 27 | 26 | 0.23929 | 65 | 9.64604 | 636 | 0.22071 | 43 | 9.30392 | 1919 |
| 28 | 27 | 0.23864 | 66 | 9.63968 | 660 | 0.22028 | 41 | 9.28473 | 2020 |
| 29 | 28 | 0.23798 | 66 | 9.63308 | 683 | 0.21987 | 40 | 9.26453 | 2126 |
| 30 | 29 | 0.23732 | 66 | 9.62625 | 704 | 0.21947 | | 9.24327 | |
| 31 | 30 | 0.23666 | 66 | 9.61921 | 726 | | | | |
| 32 | 31 | 0.23600 | | 9.61195 | | | | | |

## Tafel zur Bestimmung der Zeit nach Sonnenhöhen für den Parallel von Berlin.

| Datum. | Maerz. log. m. | diff. | Maerz. log. n. | diff. | April. log. m. | diff. | April. log. n. | diff. |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.21947 | 38 | 9.24327 | 2238 | 0.21691 | 24 | 9.00785 n | 3607 |
| 2 | 0.21909 | 35 | 9.22089 | 2367 | 0.21715 | 25 | 9.04392 n | 3324 |
| 3 | 0.21874 | 34 | 9.19722 | 2514 | 0.21740 | 28 | 9.07716 n | 3077 |
| 4 | 0.21840 | 33 | 9.17208 | 2672 | 0.21768 | 30 | 9.10793 n | 2871 |
| 5 | 0.21807 | 30 | 9.14536 | 2849 | 0.21798 | 31 | 9.13664 n | 2674 |
| 6 | 0.21777 | 28 | 9.11687 | 3062 | 0.21829 | 32 | 9.16338 n | 2515 |
| 7 | 0.21749 | 27 | 9.08625 | 3299 | 0.21861 | 35 | 9.18853 n | 2371 |
| 8 | 0.21722 | 25 | 9.05326 | 3575 | 0.21896 | 36 | 9.21224 n | 2239 |
| 9 | 0.21697 | 22 | 9.01751 | 3902 | 0.21932 | 38 | 9.23463 n | 2121 |
| 10 | 0.21675 | 21 | 8.97849 | 4294 | 0.21970 | 40 | 9.25584 n | 2015 |
| 11 | 0.21654 | 19 | 8.93555 | 4772 | 0.22010 | 41 | 9.27599 n | 1915 |
| 12 | 0.21635 | 16 | 8.88783 | 5354 | 0.22051 | 43 | 9.29514 n | 1828 |
| 13 | 0.21619 | 15 | 8.83419 | 6129 | 0.22094 | 44 | 9.31342 n | 1747 |
| 14 | 0.21604 | 13 | 8.77290 | 7134 | 0.22138 | 45 | 9.33089 n | 1669 |
| 15 | 0.21591 | 10 | 8.70156 | | 0.22183 | 48 | 9.34758 n | 1603 |
| 16 | 0.21581 | 9 | 8.61598 | | 0.22231 | 48 | 9.36361 n | 1536 |
| 17 | 0.21572 | 6 | 8.50933 | | 0.22279 | 50 | 9.37897 n | 1474 |
| 18 | 0.21566 | 4 | 8.36771 | | 0.22329 | 51 | 9.39371 n | 1418 |
| 19 | 0.21562 | 3 | 8.15631 | | 0.22380 | 51 | 9.40789 n | 1363 |
| 20 | 0.21559 | 0 | 7.72803 | | 0.22431 | 53 | 9.42152 n | 1313 |
| 21 | 0.21559 | 2 | 7.56379 n | | 0.22484 | 55 | 9.43465 n | 1269 |
| 22 | 0.21561 | 4 | 8.10205 n | | 0.22539 | 56 | 9.44734 n | 1221 |
| 23 | 0.21565 | 6 | 8.33472 n | | 0.22595 | 56 | 9.45955 n | 1178 |
| 24 | 0.21571 | 8 | 8.48546 n | | 0.22651 | 57 | 9.47133 n | 1138 |
| 25 | 0.21579 | 10 | 8.59688 n | | 0.22708 | 59 | 9.48271 n | 1102 |
| 26 | 0.21589 | 12 | 8.68554 n | 7347 | 0.22767 | 59 | 9.49373 n | 1064 |
| 27 | 0.21601 | 14 | 8.75901 n | 6266 | 0.22826 | 59 | 9.50437 n | 1028 |
| 28 | 0.21615 | 16 | 8.82167 n | 5467 | 0.22885 | 60 | 9.51465 n | 995 |
| 29 | 0.21631 | 18 | 8.87634 n | 4848 | 0.22945 | 61 | 9.52460 n | 963 |
| 30 | 0.21649 | 20 | 8.92482 n | 4353 | 0.23006 | 62 | 9.53423 n | 936 |
| 31 | 0.21669 | 22 | 8.96835 n | 3950 | 0.23068 | | 9.54359 n | |
| 32 | 0.21691 | | 9.00785 n | | | | | |

# Tafel zur Bestimmung der Zeit nach Sonnenhöhen für den Parallel von Berlin.

| Datum. | Mai. log. m. | diff. | Mai. log. n. | diff. | Juni. log. m. | diff. | Juni. log. n. | diff. |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.23068 | 62 | 9.54359 n | 904 | 0.24853 | 41 | 9.72221 n | 292 |
| 2 | 0.2313c | 62 | 9.55263 n | 876 | 0.24894 | 39 | 9.72513 n | 276 |
| 3 | 0.23192 | 62 | 9.56139 n | 849 | 0.24933 | 38 | 9.72789 n | 261 |
| 4 | 0.23254 | 64 | 9.56988 n | 823 | 0.24971 | 36 | 9.73050 n | 246 |
| 5 | 0.23318 | 63 | 9.57811 n | 797 | 0.25007 | 34 | 9.73296 n | 231 |
| 6 | 0.23381 | 63 | 9.58608 n | 772 | 0.25041 | 32 | 9.73527 n | 218 |
| 7 | 0.23444 | 63 | 9.59380 n | 749 | 0.25073 | 31 | 9.73745 n | 202 |
| 8 | 0.23507 | 63 | 9.60129 n | 725 | 0.25104 | 28 | 9.73947 n | 186 |
| 9 | 0.23570 | 63 | 9.60854 n | 703 | 0.25132 | 26 | 9.74133 n | 173 |
| 10 | 0.23633 | 63 | 9 61557 n | 680 | 0.25158 | 24 | 9.74306 n | 157 |
| 11 | 0.23696 | 63 | 9.62237 n | 660 | 0.25182 | 23 | 9.74463 n | 144 |
| 12 | 0.23759 | 62 | 9.62897 n | 640 | 0.25205 | 19 | 9.74607 n | 127 |
| 13 | 0.23821 | 62 | 9.63537 n | 619 | 0.25224 | 18 | 9.74734 n | 115 |
| 14 | 0.23883 | 61 | 9.64156 n | 598 | 0.25242 | 16 | 9.74849 n | 101 |
| 15 | 0.23944 | 62 | 9.64754 n | 582 | 0.25258 | 13 | 9.74950 n | 85 |
| 16 | 0.24006 | 61 | 9.65336 n | 562 | 0.25271 | 11 | 9.75035 n | 70 |
| 17 | 0.24067 | 59 | 9.65898 n | 542 | 0.25282 | 9 | 9.75105 n | 56 |
| 18 | 0.24126 | 59 | 9.66440 n | 525 | 0.25291 | 7 | 9.75161 n | 43 |
| 19 | 0.24185 | 59 | 9.66965 n | 506 | 0.25298 | 5 | 9.75204 n | 29 |
| 20 | 0.24244 | 57 | 9.67471 n | 487 | 0.25303 | 1 | 9.75233 n | 12 |
| 21 | 0.24301 | 56 | 9.67958 n | 469 | 0.25304 | 0 | 9.75245 n | 0 |
| 22 | 0.24357 | 55 | 9.68427 n | 454 | 0.25304 | 2 | 9.75245 n | 16 |
| 23 | 0.24412 | 55 | 9.68881 n | 437 | 0.25302 | 5 | 9.75229 n | 30 |
| 24 | 0.24467 | 53 | y.69318 n | 420 | 0.25297 | 7 | 9.75199 n | 44 |
| 25 | 0.24520 | 51 | 9.69738 n | 402 | 0.25290 | 9 | 9.75155 n | 58 |
| 26 | 0.24571 | 51 | 9.70140 n | 388 | 0.25281 | 11 | 9.75097 n | 72 |
| 27 | 0.24622 | 49 | 9.70528 n | 370 | 0.25270 | 14 | 9.75025 n | 86 |
| 28 | 0.24671 | 48 | 9.70898 n | 354 | 0.25256 | 16 | 9.74939 n | 102 |
| 29 | 0.24719 | 46 | 9.71252 n | 338 | 0.25240 | 18 | 9.74837 n | 116 |
| 30 | 0.24765 | 45 | 9.71590 n | 323 | 0.25222 | 20 | 9.74721 n | 129 |
| 31 | 0.24810 | 43 | 9.71913 n | 308 | 0.25202 | | 9.74592 n | |
| 32 | 0.24853 | | 9.72221 n | | | | | |

# Tafel zur Bestimmung der Zeit nach Sonnenhöhen für den Parallel von Berlin.

| Datum. | Juli. | | | | August. | | | |
|---|---|---|---|---|---|---|---|---|
| | log. m. | diff. | log. n. | diff. | log. m. | diff. | log. n. | diff. |
| 1 | 0.25202 | 22 | 9.74592 n | 145 | 0.23762 | 61 | 9.62935 n | 652 |
| 2 | 0.25180 | 25 | 9.74447 n | 159 | 0.23701 | 63 | 9.62283 n | 676 |
| 3 | 0.25155 | 25 | 9.74288 u | 171 | 0.23638 | 63 | 9.61607 n | 697 |
| 4 | 0.25130 | 28 | 9.74117 n | 188 | 0.23575 | 63 | 9.60910 n | 717 |
| 5 | 0.25102 | 31 | 9.73929 n | 202 | 0.23512 | 63 | 9.60193 n | 740 |
| 6 | 0.25071 | 33 | 9.73727 n | 219 | 0.23449 | 62 | 9.59453 n | 762 |
| 7 | 0.25038 | 34 | 9.73508 n | 231 | 0.23387 | 63 | 9.58691 n | 789 |
| 8 | 0.25004 | 36 | 9.73277 n | 246 | 0.23324 | 62 | 9.57902 n | 811 |
| 9 | 0.24968 | 38 | 9.73031 n | 264 | 0.23262 | 62 | 9.57091 n | 839 |
| 10 | 0.24930 | 39 | 9.72767 n | 275 | 0.23200 | 62 | 9.56252 n | 865 |
| 11 | 0.24891 | 41 | 9.72491 n | 291 | 0.23138 | 61 | 9.55387 n | 892 |
| 12 | 0.24850 | 43 | 9.72200 n | 308 | 0.23077 | 61 | 9.54495 n | 921 |
| 13 | 0.24807 | 45 | 9.71892 n | 324 | 0.23016 | 60 | 9.53574 n | 947 |
| 14 | 0.24762 | 46 | 9.71568 n | 338 | 0.22956 | 60 | 9.52627 n | 982 |
| 15 | 0.24716 | 48 | 9.71230 n | 354 | 0.22896 | 60 | 9.51645 n | 1016 |
| 16 | c.24668 | 49 | 9.70876 n | 369 | 0.22836 | 58 | 9.50629 n | 1046 |
| 17 | 0.24619 | 50 | 9.70507 n | 385 | 0.22778 | 58 | 9.49583 n | 1083 |
| 18 | 0.24569 | 51 | 9.70122 n | 400 | 0.22720 | 57 | 9.48500 n | 1118 |
| 19 | 0.24518 | 53 | 9.69722 n | 418 | 0.22663 | 56 | 9.47382 n | 1160 |
| 20 | 0.24465 | 54 | 9.69304 n | 434 | 0.22607 | 55 | 9.46222 n | 1199 |
| 21 | 0.24411 | 55 | 9.68870 n | 452 | 0.22552 | 54 | 9.45023 n | 1244 |
| 22 | 0.24356 | 56 | 9.68418 n | 467 | 0.22498 | 53 | 9.43779 n | 1285 |
| 23 | 0.24300 | 57 | 9.67951 n | 485 | 0.22445 | 52 | 9.42494 n | 1334 |
| 24 | 0.24243 | 58 | 9.67466 n | 502 | 0.22393 | 50 | 9.41160 n | 1385 |
| 25 | 0.24185 | 58 | 9.66964 n | 519 | 0.22343 | 50 | 9.39775 n | 1441 |
| 26 | 0.24127 | 59 | 9.66445 n | 537 | 0.22293 | 48 | 9.38334 n | 1499 |
| 27 | 0.24068 | 61 | 9.65908 n | 558 | 0.22245 | 47 | 9.36835 n | 1564 |
| 28 | 0.24007 | 60 | 9.65350 n | 575 | 0.22198 | 46 | 9.35271 n | 1624 |
| 29 | 0.23947 | 61 | 9.64775 n | 593 | 0.22152 | 44 | 9.33644 n | 1697 |
| 30 | 0.23886 | 62 | 9.64182 n | 614 | 0.22108 | 43 | 9.31947 n | 1777 |
| 31 | 0.23824 | 62 | 9.63568 n | 633 | 0.22065 | 40 | 9.30170 n | 1860 |
| 32 | 0.23762 | | 9.62935 n | | 0.22025 | | 9.28310 n | |

# Tafel zur Bestimmung der Zeit nach Sonnenhöhen für den Parallel von Berlin.

| Datum. | September. | | | | October. | | | |
|---|---|---|---|---|---|---|---|---|
| | log. m. | diff. | log. n. | diff. | log. m. | diff. | log. n. | diff. |
| 1 | 0.22025 | 40 | 9.28310 n | 1956 | 0.21623 | 17 | 8 84944 | 5126 |
| 2 | 0.21985 | 38 | 9.26354 n | 2056 | 0.21640 | 19 | 8.90070 | 4587 |
| 3 | 0.21947 | 37 | 9.24298 n | 2167 | 0.21659 | 21 | 8.94657 | 4141 |
| 4 | 0.21910 | 35 | 9.22131 n | 2289 | 0.21680 | 23 | 8.98798 | 3777 |
| 5 | 0.21875 | 33 | 9.19842 n | 2426 | 0.21703 | 25 | 9.02575 | 3468 |
| 6 | 0.21842 | 31 | 9.17416 n | 2580 | 0.21728 | 26 | 9.06043 | 3207 |
| 7 | 0.21811 | 30 | 9.14836 n | 2747 | 0.21754 | 28 | 9.09250 | 2982 |
| 8 | 0.21781 | 28 | 9.12089 n | 2944 | 0.21782 | 31 | 9.12232 | 2789 |
| 9 | 0.21753 | 26 | 9.09145 n | 3163 | 0.21813 | 32 | 9.15021 | 2609 |
| 10 | 0.21727 | 25 | 9.05982 n | 3427 | 0.21845 | 34 | 9.17630 | 2459 |
| 11 | 0.21702 | 22 | 9.02555 n | 3726 | 0.21879 | 36 | 9.20089 | 2325 |
| 12 | 0.21680 | 21 | 8.98829 n | 4094 | 0.21915 | 37 | 9.22414 | 2199 |
| 13 | 0.21659 | 19 | 8.94735 n | 4528 | 0.21952 | 40 | 9.24613 | 2086 |
| 14 | 0.21640 | 17 | 8.90207 n | 5068 | 0.21992 | 41 | 9.26699 | 1984 |
| 15 | 0.21623 | 15 | 8.85139 n | 5746 | 0.22033 | 42 | 9.28683 | 1894 |
| 16 | 0.21608 | 13 | 8.79393 n | 6641 | 0.22075 | 44 | 9.30577 | 1807 |
| 17 | 0.21595 | 11 | 8.72752 n | | 0.22119 | 46 | 9.32384 | 1726 |
| 18 | 0.21584 | 9 | 8.64915 n | | 0.22165 | 48 | 9.34110 | 1656 |
| 19 | 0.21575 | 7 | 8.55323 n | | 0.22213 | 48 | 9.35766 | 1585 |
| 20 | 0.21568 | 5 | 8.42963 n | | 0.22261 | 50 | 9.37351 | 1525 |
| 21 | 0.21563 | 3 | 8.25626 n | | 0.22311 | 52 | 9.38876 | 1465 |
| 22 | 0.21560 | 1 | 7.96226 n | | 0.22363 | 53 | 9.40341 | 1408 |
| 23 | 0.21559 | 1 | 6.47090 n | | 0.22416 | 54 | 9.41749 | 1356 |
| 24 | 0.21560 | 3 | 7.93330 | | 0.22470 | 56 | 9.43105 | 1308 |
| 25 | 0.21563 | 5 | 8.24178 | | 0.22526 | 56 | 9.44413 | 1260 |
| 26 | 0.21568 | 7 | 8.42037 | | 0.22582 | 57 | 9.45673 | 1218 |
| 27 | 0.21575 | 9 | 8.54656 | | 0.22639 | 59 | 9.46891 | 1178 |
| 28 | 0.21584 | 11 | 8.64424 | | 0.22698 | 60 | 9.48069 | 1137 |
| 29 | 0.21595 | 13 | 8.72401 | 6720 | 0.22758 | 60 | 9.49206 | 1100 |
| 30 | 0.21608 | 15 | 8.79121 | 5823 | 0.22818 | 61 | 9.50306 | 1063 |
| 31 | 0.21623 | | 8.84944 | | 0.22879 | 63 | 9.51369 | 1032 |
| 32 | | | | | 0.22942 | | 9.52401 | |

# Tafel zur Bestimmung der Zeit nach Sonnenhöhen für den Parallel von Berlin.

| Datum. | November. | | | | December. | | | |
|---|---|---|---|---|---|---|---|---|
| | log. m. | diff. | log. n. | diff. | log. m. | diff. | log. n. | diff. |
| 1 | 0.22942 | 62 | 9.52401 | 994 | 0.24779 | 47 | 9.71695 | 336 |
| 2 | 0.23004 | 64 | 9.53395 | 967 | 0.24826 | 44 | 9.72031 | 318 |
| 3 | 0.23068 | 64 | 9.54362 | 936 | 0.24870 | 43 | 9.72349 | 302 |
| 4 | 0.23132 | 64 | 9.55298 | 905 | 0.24913 | 41 | 9.72651 | 284 |
| 5 | 0.23196 | 65 | 9.56203 | 876 | 0.24954 | 39 | 9.72935 | 269 |
| 6 | 0.23261 | 66 | 9.57079 | 852 | 0.24993 | 38 | 9.73204 | 254 |
| 7 | 0.23327 | 65 | 9.57931 | 823 | 0.25031 | 35 | 9.73458 | 234 |
| 8 | 0.23392 | 66 | 9.58754 | 797 | 0.25066 | 32 | 9.73692 | 216 |
| 9 | 0.23458 | 66 | 9.59551 | 775 | 0.25098 | 31 | 9.73908 | 202 |
| 10 | 0.23524 | 65 | 9.60326 | 749 | 0.25129 | 27 | 9.74110 | 185 |
| 11 | 0.23589 | 66 | 9.61075 | 726 | 0.25156 | 26 | 9.74295 | 168 |
| 12 | 0.23655 | 66 | 9.61801 | 703 | 0.25182 | 24 | 9.74463 | 154 |
| 13 | 0.23721 | 66 | 9.62504 | 683 | 0.25206 | 21 | 9.74617 | 136 |
| 14 | 0.23787 | 65 | 9.63187 | 657 | 0.25227 | 19 | 9.74753 | 119 |
| 15 | 0.23852 | 64 | 9.63844 | 637 | 0.25246 | 16 | 9.74872 | 103 |
| 16 | 0.23916 | 64 | 9.64481 | 615 | 0.25262 | 13 | 9.74975 | 87 |
| 17 | 0.23980 | 64 | 9.65096 | 597 | 0.25275 | 11 | 9.75062 | 68 |
| 18 | 0.24044 | 63 | 9.65693 | 576 | 0.25286 | 9 | 9.75130 | 55 |
| 19 | 0.24107 | 62 | 9.66269 | 555 | 0.25295 | 6 | 9.75185 | 38 |
| 20 | 0.24169 | 62 | 9.66824 | 535 | 0.25301 | 3 | 9.75223 | 20 |
| 21 | 0.24231 | 60 | 9.67359 | 516 | 0.25304 | 1 | 9.75243 | 4 |
| 22 | 0.24291 | 60 | 9.67875 | 499 | 0.25305 | 2 | 9.75247 | 12 |
| 23 | 0.24351 | 58 | 9.68374 | 477 | 0.25303 | 5 | 9.75235 | 29 |
| 24 | 0.24409 | 56 | 9.68851 | 459 | 0.25298 | 7 | 9.75206 | 45 |
| 25 | 0.24465 | 56 | 9.69310 | 443 | 0.25291 | 9 | 9.75161 | 59 |
| 26 | 0.24521 | 55 | 9.69753 | 424 | 0.25282 | 12 | 9.75102 | 77 |
| 27 | 0.24576 | 53 | 9.70177 | 406 | 0.25270 | 15 | 9.75025 | 94 |
| 28 | 0.24629 | 52 | 9.70583 | 389 | 0.25255 | 18 | 9.74931 | 111 |
| 29 | 0.24681 | 50 | 9.70972 | 370 | 0.25237 | 19 | 9.74820 | 125 |
| 30 | 0.24731 | 48 | 9.71342 | 353 | 0.25218 | 22 | 9.74695 | 143 |
| 31 | 0.24779 | | 9.71695 | | 0.25196 | 25 | 9.74552 | 162 |
| 32 | | | | | 0.25171 | | 9.74390 | |

# Tafel zur Bestimmung der Zeit nach Sonnenhöhen für den Parallel von Berlin.

| | n. | diff. | | n. | diff. |
|---|---|---|---|---|---|
| März 4 | + 0.14862 | 887 | September 6 | — 0.14933 | 861 |
| 5 | + 0.13975 | 888 | 7 | — 0.14072 | 862 |
| 6 | + 0.13087 | 890 | 8 | — 0.13210 | 866 |
| 7 | + 0.12197 | 892 | 9 | — 0.12344 | 867 |
| 8 | + 0.11305 | 894 | 10 | — 0.11477 | 871 |
| 9 | + 0.10411 | 894 | 11 | — 0.10606 | 872 |
| 10 | + 0.09517 | 896 | 12 | — 0.09734 | 876 |
| 11 | + 0.08621 | 897 | 13 | — 0.08858 | 877 |
| 12 | + 0.07724 | 898 | 14 | — 0.07981 | 879 |
| 13 | + 0.06826 | 898 | 15 | — 0.07102 | 880 |
| 14 | + 0.05928 | 898 | 16 | — 0.06222 | 882 |
| 15 | + 0.05030 | 900 | 17 | — 0.05340 | 882 |
| 16 | + 0.04130 | 899 | 18 | — 0.04458 | 883 |
| 17 | + 0.03231 | 899 | 19 | — 0.03575 | 885 |
| 18 | + 0.02332 | 899 | 20 | — 0.02690 | 886 |
| 19 | + 0.01433 | 899 | 21 | — 0.01804 | 887 |
| 20 | + 0.00534 | 900 | 22 | — 0.00917 | 887 |
| 21 | — 0.00366 | 899 | 23 | — 0.00030 | 888 |
| 22 | — 0.01265 | 897 | 24 | + 0.00858 | 887 |
| 23 | — 0.02162 | 896 | 25 | + 0.01745 | 887 |
| 24 | — 0.03058 | 895 | 26 | + 0.02632 | 888 |
| 25 | — 0.03953 | 895 | 27 | + 0.03520 | 888 |
| 26 | — 0.04848 | 893 | 28 | + 0.04408 | 888 |
| 27 | — 0.05741 | 891 | 29 | + 0.05296 | 887 |
| 28 | — 0.06632 | 890 | 30 | + 0.06183 | 887 |
| 29 | — 0.07522 | 888 | October 1 | + 0.07070 | 886 |
| 30 | — 0.08410 | 887 | 2 | + 0.07956 | 886 |
| 31 | — 0.09297 | 885 | 3 | + 0.08842 | 885 |
| April 1 | — 0.10182 | 882 | 4 | + 0.09727 | 884 |
| 2 | — 0.11064 | 880 | 5 | + 0.10611 | 882 |
| 3 | — 0.11944 | 877 | 6 | + 0.11493 | 881 |
| 4 | — 0.12821 | 875 | 7 | + 0.12374 | 879 |
| 5 | — 0.13696 | 871 | 8 | + 0.13253 | 879 |
| 6 | — 0.14567 | | 9 | + 0.14132 | |

# Tafel zur Berechnung der Höhen nach Barometer-Messungen.

Nach Gauss.

t + t′ ist die Summe der an beiden Stationen beobachteten Wärme der Luft, nach Réaumur.

| t + t′ | A | t + t′ | A | t + t′ | A | t + t′ | A |
|---|---|---|---|---|---|---|---|
| ° | | ° | | ° | | ° | |
| − 10 | 4.25337 | + 5 | 4.26980 | + 20 | 4.28564 | + 35 | 4.30092 |
| − 9 | 4.25448 | + 6 | 4.27087 | + 21 | 4.28667 | + 36 | 4.30192 |
| − 8 | 4.25560 | + 7 | 4.27195 | + 22 | 4.28770 | + 37 | 4.30291 |
| − 7 | 4.25671 | + 8 | 4.27301 | + 23 | 4.28874 | + 38 | 4.30391 |
| − 6 | 4.25781 | + 9 | 4.27408 | + 24 | 4.28976 | + 39 | 4.30490 |
| − 5 | 4.25892 | + 10 | 4.27514 | + 25 | 4.29079 | + 40 | 4.30589 |
| − 4 | 4.26002 | + 11 | 4.27620 | + 26 | 4.29181 | + 41 | 4.30688 |
| − 3 | 4.26111 | + 12 | 4.27726 | + 27 | 4.29283 | + 42 | 4.30787 |
| − 2 | 4.26220 | + 13 | 4.27832 | + 28 | 4.29385 | + 43 | 4.30885 |
| − 1 | 4.26330 | + 14 | 4.27937 | + 29 | 4.29487 | + 44 | 4.30984 |
| 0 | 4.26439 | + 15 | 4.28042 | + 30 | 4.29588 | + 45 | 4.31082 |
| + 1 | 4.26548 | + 16 | 4.28147 | + 31 | 4.29689 | + 46 | 4.31179 |
| + 2 | 4.26658 | + 17 | 4.28251 | + 32 | 4.29790 | + 47 | 4.31277 |
| + 3 | 4.26765 | + 18 | 4.28356 | + 33 | 4.29891 | + 48 | 4.31374 |
| + 4 | 4.26872 | + 19 | 4.28460 | + 34 | 4.29991 | + 49 | 4.31471 |
| + 5 | 4.26980 | + 20 | 4.28564 | + 35 | 4.30092 | + 50 | 4.31568 |

## Correction für Polhöhe.

| Pol-höhe | Corr. + | | Pol-höhe | Corr. + | | Pol-höhe | Corr. + | | Pol-höhe | Corr. + | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ° | | ° | ° | | ° | ° | | ° | ° | | ° |
| 0 | 124 | 90 | 11 | 115 | 79 | 23 | 86 | 67 | 34 | 46 | 56 |
| 1 | 123 | 89 | 12 | 113 | 78 | 24 | 83 | 66 | 35 | 42 | 55 |
| 2 | 123 | 88 | 13 | 111 | 77 | 25 | 79 | 65 | 36 | 38 | 54 |
| 3 | 123 | 87 | 14 | 109 | 76 | 26 | 76 | 64 | 37 | 34 | 53 |
| 4 | 122 | 86 | 15 | 107 | 75 | 27 | 73 | 63 | 38 | 30 | 52 |
| 5 | 122 | 85 | 16 | 105 | 74 | 28 | 69 | 62 | 39 | 26 | 51 |
| 6 | 121 | 84 | 17 | 102 | 73 | 29 | 65 | 61 | 40 | 21 | 50 |
| 7 | 120 | 83 | 18 | 100 | 72 | 30 | 62 | 60 | 41 | 17 | 49 |
| 8 | 119 | 82 | 19 | 97 | 71 | 31 | 58 | 59 | 42 | 13 | 48 |
| 9 | 118 | 81 | 20 | 95 | 70 | 32 | 54 | 58 | 43 | 9 | 47 |
| 10 | 116 | 80 | 21 | 92 | 69 | 33 | 50 | 57 | 44 | 4 | 46 |
| 11 | 115 | 79 | 22 | 89 | 68 | 34 | 46 | 56 | 45 | 0 | 45 |
| | Corr. − | Pol höhe | | Corr. − | Pol-höhe | | Corr. − | Pol-höhe | | Corr. − | Pol-höhe |

| log h | Corr. |
|---|---|
| 2.0 | + 1 |
| 2.5 | + 2 |
| 3.0 | + 7 |
| 3.2 | + 11 |
| 3.4 | + 17 |
| 3.6 | + 27 |
| 3.8 | + 43 |
| 4.0 | + 68 |

### Gebrauchs-Anweisung.

Es seien b,b′ die beobachteten Barometerstände, in beliebigem Masse,
„ „ t,t′ Temperatur der Luft, Réaumur,
„ „ T,T′ „ des Quecksilbers.

Von log b und log b′ werden 10 T und 10 T′ (in Einheiten der 5ten Decimale) abgezogen, und bilde man $u = \log b - 10\,T - (\log b' - 10\,T')$.

Dann ist log h (Höhe in Metern) = log u + A, wozu noch die Correctionen wegen Polhöhe und wegen Höhe h hinzukommen.

**Beispiel.** Höhe des Pic de Bigore über Tarbes, Breite = 43°

b = 27.17 Zoll T = 14.9 R. t = 15.8 R. lg b 1.43409 − 149
b′ = 19.845 „ T′ = 7.6 t′ = 3.2 lg b′ 1.29765 − 76

u 0.13571
lg u 9.13261
A (18,5) 4.28408

lg h 3.41669
Polh. (43) + 9
lg h (3.4) + 17

h = 2612 Meter lg 3.41695

In der Chronologie kommen drei Zeitkreise oder Cyclus zur Anwendung, nämlich:

1) Der Sonnencyclus von 28 Jahren, nach dessen Ablauf die Sonntage wieder auf denselben Jahrestag zurückkehren;
2) der Mondcyclus von 19 Jahren, welcher nahe 235 Mondumläufen gleichkommt, und
3) der Indictionscyclus von 15 Jahren, von den späteren römischen Kaisern eingeführt.

Auf diese drei Zeitkreise gründet sich die Julianische Periode von 28.19.15 = 7980 Jahren. Das Jahr 1 der Julianischen Periode ist das Jahr 4713 vor Christi Geburt, und man findet daher das Jahr der Julianischen Periode, wenn man das Jahr vor Chr. Geb. von 4714 subtrahirt, und nach Chr. Geb., wenn die Jahreszahl zu 4713 addirt wird.

Die Geburt Christi wird auf den 25. December desjenigen Jahres gesetzt, welches dem Jahr 1 unserer heutigen Jahresrechnung vorangeht. Das Jahr 1 vor Chr. Geb. ist dasjenige, in welches die Geburt Christi selbst fällt, von wo anfangend beliebig weit rückwärts gezählt wird. Auf das Jahr 1 v. Chr. folgt unmittelbar das Jahr 1 n. Chr.

Die Julianischen Jahre werden zu $365\frac{1}{4}$ Tagen gerechnet. Es folgen regelmässig auf einander drei Gemeinjahre zu 365 Tagen und ein Schaltjahr zu 366 Tagen. Das Jahr 1 der Julianischen Periode war ein Schaltjahr, und so sind alle Jahre derselben, welche durch 4 dividirt den Rest 1 geben, Schaltjahre. Von der Jahreszahl ausgehend sind die Jahre v. Chr. Schaltjahre, welche durch 4 dividirt den Rest 1 geben, und n. Chr., welche keinen Rest geben.

Sonnencirkel ist der Rest, welcher sich ergiebt, wenn das Jahr der Julianischen Periode durch 28 dividirt wird.

Güldene Zahl ist der Rest der Division durch 19.

Römerzinszahl ist der Rest der Division durch 15.

Ist von einem Jahre A der Julianischen Periode der Sonnencirkel = a, die güldene Zahl = b und die Römerzinszahl = c, so hat man die Gleichung

$$A = 4845 . a + 4200 . b + 6916 . c - 7980 . n,$$

wo n so gross zu nehmen ist, bis der übrig bleibende Rest kleiner als 7980 ist.

Für die Jahre nach Christi Geburt hat man auch

Sonnencirkel = Rest: Jahreszahl + 9, dividirt durch 28,
güldene Zahl = Rest: Jahreszahl + 1, dividirt durch 19,
Römerzinszahl = Rest: Jahreszahl + 3, dividirt durch 15.

Das Julianische Jahr ist um 11 Minuten 12 Secunden länger als das wirkliche Sonnenjahr, von einer Frühlingsnachtgleiche zur andern gerechnet, wodurch im Julianischen Kalender die Frühlingsnachtgleiche, die zur Zeit des ersten Concils zu Nicäa auf den 21. März fiel, im 16. Jahrhundert um 10 Tage früher eintraf. Diese Abweichung gegen das wirkliche Sonnenjahr wurde durch den von Papst Gregor XIII. im Jahr 1582 eingeführten Gregorianischen Kalender ausgeglichen, wonach auf den 4. October dieses Jahres, einem Donnerstag, der 15. October auf den folgenden Freitag angesetzt war. Nach diesem jetzt in der ganzen Christenheit, mit Ausnahme der griechischen Kirche, eingeführten Gregorianischen Kalender werden in 4 Jahrhunderten 3 Schalttage ausgelassen. Die Jahre 1600, 2000, 2400 etc. sind Schaltjahre, wogegen 1700, 1800, 1900 und alle nicht durch 4 theilbare Jahrhunderte Gemeinjahre sind. Im Uebrigen ist jedes Jahr, wenn die Jahreszahl durch 4 theilbar ist, ein Schaltjahr.

Das Osterfest, wonach die beweglichen Feste sich richten, wird den ersten Sonntag nach dem Frühlingsvollmond gefeiert. Fällt dieser selbst auf einen Sonntag, so ist Ostern am nächsten Sonntage. Der Frühlingsvollmond ist derjenige, welcher nach cyclischer Rechnung auf den 21. März, oder zunächst nach diesem Tage eintrifft. Hiernach kann Ostern auf den 22. März, als frühestem Termin, und auf den 25. April, als spätestem Termin, fallen.

## Julianische Jahre vor Christi Geburt.

Das Datum der Sonntage ist = l + m + n ± 7.t.

| Jahrhundert | Zahl l | Jahrhundert | Zahl l | Jahrhundert | Zahl l | Jahr | Zahl m 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2 | 1000 | 6 | 2000 | 3 | 0 | 0 | 1 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 |
| 100 | 1 | 1100 | 5 | 2100 | 2 | 10 | 6 | 0 | 1 | 2 | 4 | 5 | 6 | 0 | 2 | 3 |
| 200 | 7 | 1200 | 4 | 2200 | 1 | 20 | 4 | 5 | 0 | 1 | 2 | 3 | 5 | 6 | 0 | 1 |
| 300 | 6 | 1300 | 3 | 2300 | 7 | 30 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 6 | 0 |
| 400 | 5 | 1400 | 2 | 2400 | 6 | 40 | 1 | 2 | 4 | 5 | 6 | 0 | 2 | 3 | 4 | 5 |
| 500 | 4 | 1500 | 1 | 2500 | 5 | 50 | 0 | 1 | 2 | 3 | 5 | 6 | 0 | 1 | 3 | 4 |
| 600 | 3 | 1600 | 7 | 2600 | 4 | 60 | 5 | 6 | 1 | 2 | 3 | 4 | 6 | 0 | 1 | 2 |
| 700 | 2 | 1700 | 6 | 2700 | 3 | 70 | 4 | 5 | 6 | 0 | 2 | 3 | 4 | 5 | 0 | 1 |
| 800 | 1 | 1800 | 5 | 2800 | 2 | 80 | 2 | 3 | 5 | 6 | 0 | 1 | 3 | 4 | 5 | 6 |
| 900 | 7 | 1900 | 4 | 2900 | 1 | 90 | 1 | 2 | 3 | 4 | 6 | 0 | 1 | 2 | 4 | 5 |

## Julianischer und Gregorianischer Kalender nach Christi Geburt.

Das Datum der Sonntage ist = l + m + n ± 7.t.

| Jahrhundert | Zahl l | Jahrhundert | Zahl l | Jahr | Zahl m 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Monat | Zahl n |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 3 | 1100 | 7 | 0 | 0 | 6 | 5 | 4 | 2 | 1 | 0 | 6 | 4 | 3 | Januar | 0.1 |
| 100 | 4 | 1200 | 1 | 10 | 2 | 1 | 6 | 5 | 4 | 3 | 1 | 0 | 6 | 5 | Februar | 4.5 |
| 200 | 5 | 1300 | 2 | 20 | 3 | 2 | 1 | 0 | 5 | 4 | 3 | 2 | 0 | 6 | März | 4 |
| 300 | 6 | 1400 | 3 | 30 | 5 | 4 | 2 | 1 | 0 | 6 | 4 | 3 | 2 | 1 | April | 1 |
| 400 | 7 | 1500 | 4.7 | 40 | 6 | 5 | 4 | 3 | 1 | 0 | 6 | 5 | 3 | 2 | Mai | 6 |
| 500 | 1 | 1600 | 5.1 | 50 | 1 | 0 | 5 | 4 | 3 | 2 | 0 | 6 | 5 | 4 | Juni | 3 |
| 600 | 2 | 1700 | 6.3 | 60 | 2 | 1 | 0 | 6 | 4 | 3 | 2 | 1 | 6 | 5 | Juli | 1 |
| 700 | 3 | 1800 | 7.5 | 70 | 4 | 3 | 1 | 0 | 6 | 5 | 3 | 2 | 1 | 0 | August | 5 |
| 800 | 4 | 1900 | 1.7 | 80 | 5 | 4 | 3 | 2 | 0 | 6 | 5 | 4 | 2 | 1 | September | 2 |
| 900 | 5 | 2000 | 2.1 | 90 | 0 | 6 | 4 | 3 | 2 | 1 | 6 | 5 | 4 | 3 | October | 0 |
| 1000 | 6 | 2100 | 3.3 | 100 | 1 | | | | | | | | | | November | 4 |
| | | | | | | | | | | | | | | | December | 2 |

## Datum, an welchem der Frühlings-Vollmond eintritt.

| Nach dem Julianischen Kalender | | Nach dem Gregorianischen Kalender: Von 1582 bis 1699 | | Von 1700 bis 1899 | | Von 1900 bis 2199 | |
|---|---|---|---|---|---|---|---|
| Güldene Zahl | Frühlings-Vollmond | Güldene Zahl | Frühlings-Vollmond | Güldene Zahl | Frühlings-Vollmond | Güldene Zahl | Frühlings-Vollmond |
| 1 | 5. April | 1 | 12. April | 1 | 13. April | 1 | 14. April |
| 2 | 25. März | 2 | 1. April | 2 | 2. April | 2 | 3. April |
| 3 | 13. April | 3 | 21. März | 3 | 22. März | 3 | 23. März |
| 4 | 2. April | 4 | 9. April | 4 | 10. April | 4 | 11. April |
| 5 | 22. März | 5 | 29. März | 5 | 30. März | 5 | 31. März |
| 6 | 10. April | 6 | 17. April | 6 | 18. April | 6 | 18. April |
| 7 | 30. März | 7 | 6. April | 7 | 7. April | 7 | 8. April |
| 8 | 18. April | 8 | 26. März | 8 | 27. März | 8 | 28. März |
| 9 | 7. April | 9 | 14. April | 9 | 15. April | 9 | 16. April |
| 10 | 27. März | 10 | 3. April | 10 | 4. April | 10 | 5. April |
| 11 | 15. April | 11 | 23. März | 11 | 24. März | 11 | 25. März |
| 12 | 4. April | 12 | 11. April | 12 | 12. April | 12 | 13. April |
| 13 | 24. März | 13 | 31. März | 13 | 1. April | 13 | 2. April |
| 14 | 12. April | 14 | 18. April | 14 | 21. März | 14 | 22. März |
| 15 | 1. April | 15 | 8. April | 15 | 9. April | 15 | 10. April |
| 16 | 21. März | 16 | 28. März | 16 | 29. März | 16 | 30. März |
| 17 | 9. April | 17 | 16. April | 17 | 17. April | 17 | 17. April |
| 18 | 29. März | 18 | 5. April | 18 | 6. April | 18 | 7. April |
| 19 | 17. April | 19 | 25. März | 19 | 26. März | 19 | 27. März |

## Bemerkungen zu vorstehenden Tafeln.

1) Das Datum der Sonntage in einem beliebigen Jahre vor oder nach Chr. Geb. erhält man, wenn die Zahlen l, m und n zu einander addirt werden. Ist diese Zahl grösser als 7, so ist der erste Sonntag des betreffenden Monats 7 Tage früher. Die Zahl l entspricht dem vollen Jahrhundert. Die Zahl m erhält man aus dem entsprechenden Täfelchen, da wo die Horizontale für die Zehner der Jahreszahl mit der Verticalen für die Einer zusammentrifft. Die Zahl n gilt für den betreffenden Monat.

2) Die Zahl l ist für die Jahrhunderte 1500—2100 n. Chr. doppelt angegeben. Hier gilt die erste Zahl für den Julianischen, die zweite für den Gregorianischen Kalender.

3) Die Zahl n ist für die Monate Januar und Februar ebenfalls doppelt angegeben. Hier gilt die erste für ein Gemeinjahr, die zweite für ein Schaltjahr.

4) Das Osterfest ist in den ersten Jahrhunderten der christlichen Zeitrechnung nicht überall an demselben Tage gefeiert worden. Erst vom sechsten oder siebenten Jahrhundert an lässt sich annehmen, dass die jetzt noch in der griechischen Kirche bestehende Rechnungsweise eine für die ganze Christenheit allgemeine war. Hiernach fällt Ostern auf den ersten Sonntag nach dem Frühlings-Vollmond, und wenn dieser selbst auf einen Sonntag fällt, auf den nächstfolgenden Sonntag. Diese Regel gilt auch für den Gregorianischen Kalender.

5) Der Frühlings-Vollmond, von der Güldenen Zahl abhangend, ist in der ersten Tabelle für den Julianischen Kalender angegeben. Für den Gregorianischen Kalender verändert sich diese Tabelle, je nach dem Werthe der Epakte im ersten Jahre des Mondcyclus, und es sind von den 30 möglichen Tabellen hier die 3 bis zum Jahr 2200 reichenden angegeben.

**Beispiel 1.** Auf welchen Wochentag fällt der 24. Mai 2357 v. Chr.?
Nach obiger Tafel ist für 2300 . . . l = 7
„ 57 . . . m = 1
„ Mai . . . n = 6
daher l + m + n . . . = 14
Die Sonntage im Mai sind daher den 7., 14., 21., 28.; daher der 24. ein Mittwoch.

**Beispiel 2.** Auf welchen Wochentag fällt der 24. Januar 1712, der Geburtstag Friedrichs des Grossen?
Hier ist nach dem Greg. Kal. zu rechnen, daher
für 1700 . . . l = 3
„ 12 . . . m = 6
und da 1712 ein Schaltjahr, Januar . . . n = 1
l + m + n = 10
daher der 24. Januar = 10 + 2 . 7 ein Sonntag.

**Beispiel 3.** Wann ist Ostern im Jahr 742?
Die güldene Zahl ist = Rest 742 + 1 : 19 = 2, daher der Frühlings-Vollmond den 25. März. Ferner ist l + m + n für März = 11, daher der 11., 18., 25. Sonntage. Ostern fällt daher auf den 1. April.

**Beispiel 4.** Ostern für das gegenwärtige Jahr 1872 zu berechnen.
Die güldene Zahl ist = Rest 1873 : 19 = 11,
daher im Jul. Kal. der Frühl.-Vollmond 15. April.
l + m + n (April) findet sich = 9, also Ostern 16. April.
Im Greg. Kal. ist der Frühl.-Vollmond 24. März.
l + m + n (März) findet sich = 10, also 10., 17., 24., 31. Sonntage. Ostern ist daher den 31. März.

## Sonn- und Festtage.

Neujahr. Der 1. Januar.

Sonntag nach Neujahr. Wenn auf den 2. bis 5. Januar ein Sonntag fällt, so ist dieses der Sonntag nach Neujahr.

Epiphanias. Der 6. Januar.

Sonntage nach Epiphanias. Sie werden von Epiphanias an gezählt. Es giebt mindestens einen und höchstens sechs.

Sonntag Septuagesimae. 9 Wochen oder 63 Tage vor Ostern.
„ Sexagesimae. 8 „ „ 56 „ „ „
„ Estomihi. 7 „ „ 49 „ „ „
Aschermittwoch. Der Mittwoch nach Estomihi. 46 „ „ „
Sonntag Invocavit. 6 Wochen oder 42 „ „ „
Fastnachtsquatember. Mittwoch nach Invocavit, 39 „ „ „
Sonntag Reminiscere. 5 Wochen oder 35 „ „ „
„ Oculi. 4 „ „ 28 „ „ „
„ Lätare. 3 „ „ 21 „ „ „
„ Judica. 2 „ „ 14 „ „ „
„ Palmarum. 1 „ „ 7 „ „ „
Charfreitag. Der Freitag vor Ostern . . . 2 „ „ „
Ostern.
Sonntag Quasimodogeniti. 1 Woche oder 7 Tage nach Ostern.
„ Misericordias Domini. 2 „ „ 14 „ „ „
„ Jubilate. 3 „ „ 21 „ „ „
Busstag. Mittwoch nach Jubilate . . . . . 24 „ „ „
Sonntag Cantate. 4 Wochen oder 28 „ „ „
„ Rogate. 5 „ „ 35 „ „ „
Himmelfahrt. Donnerstag nach Rogate . . . 39 „ „ „
Sonntag Exaudi. 6 Wochen oder 42 „ „ „
Pfingsten. 7 „ „ 49 „ „ „
Pfingstquatember. Mittwoch nach Pfingsten 52 „ „ „
Sonntag Trinitatis. 8 Wochen oder 56 „ „ „
Frohnleichnam. Donnerstag nach Trinitatis . 60 „ „ „
1. Sonntag nach Trinitatis. 9 Wochen oder 63 „ „ „

Die Sonntage nach Trinitatis werden weiter gezählt. Es giebt deren mindestens 22 und höchstens 27.

Herbstquatember. Der Mittwoch, welcher auf den 15. bis 21. September fällt.

Advents-Sonntage. Es giebt deren vier. Der erste fällt auf den 27. November bis 3. December.

Weihnachtsquatember. Der Mittwoch, welcher auf den 14. bis 20. December fällt.

Weihnachten. Den 25. December.

## Beständige Logarithmen.

| | | log | |
|---|---|---|---|
| Basis der natürlichen Logarithmen | e = 2,71828 183 | 0.43429 448 | |
| Modul der gemeinen Logarithmen | m = 0,43429 448 | 9.63778 431 | — 10 |
| Radius des Kreises in Graden | = 57.29578 | 1.75812 263 | |
| „ „ „ in Minuten | = 3437.7468 | 3.53627 388 | |
| „ „ „ in Secunden | = 206264.8 | 5.31442 513 | |
| Umfang des Kreises in Graden | = 360 | 2.55630 250 | |
| „ „ „ in Minuten | = 21600 | 4.33445 375 | |
| „ „ „ in Secunden | = 1296000 | 6.11260 500 | |
| Verhältniss des Durchmessers zum Umkreis | $\pi$ = 3.14159 265 | 0.49714 987 | |

## Dimensionen der Erde, nach Bessel.

| | m | | |
|---|---|---|---|
| Halbe grosse Axe (Radius des Aequators) | a = 6377397.156 | 6.80464 346 | |
| „ kleine (Umdrehungsaxe) | b = 6356079.175 | 6.80318 930 | |
| Abplattung $\frac{a-b}{a} = \frac{1}{299.1528}$ | = 0.00334277 | 7.52410 699 | — 10 |
| Excentric. d. Umdrehungs-Ellipse $\sqrt{\frac{a^2-b^2}{a^2}}$ | = e = 0.08169683 | 8.91220 521 | — 10 |
| $\sqrt{1-e^2}$ | = 0.99665723 | 9.99854 583 | — 10 |
| Ein Grad des Aequators = 111306.6 Meter | | 5.04652 08 | |
| Eine geographische Meile = 7420.437 Meter | | 3.87042 95 | |

## Massvergleichung.

| | | | | |
|---|---|---|---|---|
| 1 Kilometer | = 0,134763 | geographische Meile | 9.12957 05 | — 10 |
| „ | = 0,132758 | preussische Meile | 9.12306 2 | — 10 |
| „ | = 0,621382 | englische Statutemile à 1760 Yard | 9.79335 9 | — 10 |
| „ | = 0,656180 | englische Mile à 1666²/₃ Yard | 9.81702 3 | — 10 |
| „ | = 0,937400 | russische Werst | 9.97192 5 | — 10 |
| 1 Meter | = 0.2655167 | preussische Ruthen | 9.42409 2 | — 10 |
| „ | = 3.186200 | rheinländische Fuss | 0.50327 3 | |
| „ | = 3.078444 | pariser Fuss | 0.48833 1 | |
| „ | = 3.280898 | englische Fuss | 0.51599 3 | |
| 1 Liter | = 0.873339 | preussische Quart | 9.94118 3 | — 10 |
| „ | = 0.706648 | österreichische Mass | 9.84920 3 | — 10 |
| „ | = 0.220096 | engl. imp. Gallon | 9.34261 3 | — 10 |
| 1 Kilogramm | = 2.13807 | preussische Pfund | 0.33002 2 | |
| „ | = 4.27615 | preussische Mark | 0.63105 3 | |
| „ | = 1.78566 | österreichische Pfund | 0.25179 9 | |
| „ | = 2.20464 | englische Pfund avoirdupois | 0.34333 7 | |
| „ | = 2.67924 | englische Troy Pfund | 0.42801 2 | |

### Gold, nach der gesetzlichen Ausprägung.

| | | | |
|---|---|---|---|
| 1 Zwanzigmarkstück | = 2.08264 | Ducaten | 0.31861 5 |
| „ | = 19.5806 | Engl. Schilling | 1.29182 6 |
| „ | = 4.76437 | Dollar | 0.67800 5 |
| „ | = 24.6913 | Francs | 1.39254 5 |

## Verwandlungs-Logarithmen,

**um Sinus und Tangenten kleiner Bogen in Bogen zu verwandeln, und umgekehrt, die Bogen in Graden ausgedrückt.**

| Grade | S | Sinus | T | Tang |
|---|---|---|---|---|
| 0.0° | 1.75812 3 | — | 1.75812 3 | — |
| 0.1 | 1.75812 3 | 7.2419 | 1.75812 2 | 7.2419 |
| 0.2 | 1.75812 4 | 7.5429 | 1.75812 1 | 7.5429 |
| 0.3 | 1.75812 5 | 7.7190 | 1.75811 9 | 7.7190 |
| 0.4 | 1.75812 6 | 7.8439 | 1.75811 6 | 7.8439 |
| 0.5 | 1.75812 8 | 7.9408 | 1.75811 2 | 7.9409 |
| 0.6 | 1.75813 1 | 8.0200 | 1.75810 7 | 8.0200 |
| 0.7 | 1.75813 3 | 8.0870 | 1.75810 1 | 8.0870 |
| 0.8 | 1.75813 7 | 8.1450 | 1.75809 4 | 8.1450 |
| 0.9 | 1.75814 0 | 8.1961 | 1.75808 7 | 8.1962 |
| 1.0 | 1.75814 5 | 8.2419 | 1.75807 9 | 8.2419 |
| 1.1 | 1.75814 9 | 8.2832 | 1.75806 9 | 8.2833 |
| 1.2 | 1.75815 4 | 8.3210 | 1.75805 9 | 8.3211 |
| 1.3 | 1.75816 0 | 8.3558 | 1.75804 8 | 8.3559 |
| 1.4 | 1.75816 6 | 8.3880 | 1.75803 6 | 8.3881 |
| 1.5 | 1.75817 2 | 8.4179 | 1.75802 3 | 8.4181 |
| 1.6 | 1.75817 9 | 8.4459 | 1.75801 0 | 8.4461 |
| 1.7 | 1.75818 6 | 8.4723 | 1.75799 5 | 8.4725 |
| 1.8 | 1.75819 4 | 8.4971 | 1.75798 0 | 8.4973 |
| 1.9 | 1.75820 2 | 8.5208 | 1.75796 3 | 8.5206 |
| 2.0 | 1.75821 1 | 8.5428 | 1.75794 6 | 8.5431 |
| 2.1 | 1.75822 0 | 8.5640 | 1.75792 8 | 8.5643 |
| 2.2 | 1.75822 9 | 8.5842 | 1.75790 9 | 8.5845 |
| 2.3 | 1.75823 9 | 8.6035 | 1.75788 9 | 8.6038 |
| 2.4 | 1.75825 0 | 8.6220 | 1.75786 9 | 8.6223 |
| 2.5 | 1.75826 0 | 8.6397 | 1.75784 7 | 8.6401 |
| 2.6 | 1.75827 2 | 8.6567 | 1.75782 4 | 8.6571 |
| 2.7 | 1.75828 3 | 8.6731 | 1.75780 1 | 8.6736 |
| 2.8 | 1.75829 6 | 8.6889 | 1.75777 7 | 8.6894 |
| 2.9 | 1.75830 8 | 8.7041 | 1.75775 2 | 8.7046 |
| 3.0 | 1.75832 1 | 8.7188 | 1.75772 5 | 8.7194 |
| 3.1 | 1.75833 5 | 8.7330 | 1.75769 9 | 8.7337 |
| 3.2 | 1.75834 8 | 8.7468 | 1.75767 1 | 8.7475 |
| 3.3 | 1.75836 3 | 8.7602 | 1.75764 2 | 8.7609 |
| 3.4 | 1.75837 8 | 8.7731 | 1.75761 2 | 8.7739 |
| 3.5 | 1.75839 3 | 8.7857 | 1.75758 2 | 8.7865 |
| 3.6 | 1.75840 8 | 8.7979 | 1.75755 1 | 8.7988 |
| 3.7 | 1.75842 5 | 8.8098 | 1.75751 8 | 8.8107 |
| 3.8 | 1.75844 1 | 8.8213 | 1.75748 5 | 8.8223 |
| 3.9 | 1.75845 8 | 8.8326 | 1.75745 1 | 8.8336 |
| 4.0 | 1.75847 5 | 8.8436 | 1.75741 6 | 8.8446 |

**Log. Bogen in Graden**
**= Log Sinus + S**
**= log Tang + T**

**log Sinus = log Bogen — S**
**log Tang = log Bogen — T**

